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ABSTRACT

Designed for teaching a generalized program in emergency preparedness education, the eight units of the manual can be used together or alone in any course that teaches human response to emergency preparedness or in physical education, recreation, health, biology, physiology, or science classes. The guide includes an introduction and seven major sections: mental aspects of emergency preparedness, physiological aspects of survival, survival priorities, specific emergency situations (cold and warm weather emergencies, survival in water and immersion through ice, fire, earthquakes, tsunamis, landslides, volcanos, avalanches, floods, hurricanes, lightning, tornadoes, inner city survival, nuclear emergencies, and considerations for survival); general emergency techniques (survival first aid and hygiene, improvisation, clothing, shelter, firecraft, water and food procurement, navigation, and signaling); emergency preparedness kits, and the philosophy of teaching emergency preparedness. Each unit contains objectives, activities, a reference list, films, and other information. The guide book also discusses modern disciplines that relate to survival education, and occupations and safety oriented careers that need survival knowledge on a daily basis.

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TEACHING ACTIVITIES FOR *DEFENSIVE LIVING* AND EMERGENCY PREPAREDNESS EDUCATION MODULES

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PREFACE

In the pursuit of our educational responsibilities, it seems our school systems have overlooked several important points. It is generally accepted that the educational system is geared to help students meet the ever increasing complexities and challenges that our society offers. However, nearly all of our education is geared to utilizing the modern technological conveniences our civilization offers. What about the essentials of human survival under adverse conditions where technology and modern amenities are not present? Self-reliant skills and knowledge are no longer passed from father to son and mother to daughter. The reason is understandable. Technology and, more importantly, our educational system have purported to assume the responsibility. Research study statistics quickly point out that this is not true. Death or severe injury are all too often the result of disaster or emergency situations. This is tragic considering the fact that a substantial percentage of these incidents could be prevented.

Modern survival is infinitely more complex than learning to "live off the land." Increased leisure pursuits away from civilization, world conflict, and disasters of all magnitudes have increased the probability of each of us at sometime being involved in a life threatening situation. We must orient the people of this nation to pre-plan and prepare for the possibility of emergencies; physically with skills and equipment and mentally with knowledge. In essence, we must change some of the habits, values, and attitudes of present society.

Because the subject matter of this program has never been consolidated into one source, or embodied in one educational concept, its presentation in the school classroom is only in its infancy. The interest is high, but the exposure in comparison to other traditional subjects is low. This instructors' guide was developed so teachers may choose appropriate instructional elements from a variety of practical applications, experiments, teaching aids, and outside resources. It is by no means complete, but it does represent a variety of ideas and material now used in Washington and many other states.

The following sections of this teaching guide were designed for a generalized program in Emergency Preparedness education. Each section is a complete unit which may be utilized in any course that instructs individuals or groups in human response to emergencies. The selected films are suitable for use in a variety of other classroom courses such as recreation, P.E., health, biology, physiology or science. The many illustrative activities stimulate thought, and offer practical demonstrations in the use of the material in explaining a variety of situations applicable to modern day living.

TEACHER'S GUIDE
FOR
EMERGENCY PREPAREDNESS TODAY

SECTION I

INTRODUCTION TO EMERGENCY PREPAREDNESS

OBJECTIVES

At the completion of this section, the student will be able to:

. Define the term survival in relation to everyday living, and differentiate between traditional and modern connotations of this term.

. Relate the similarities between modern technological failure in a city and a backcountry emergency.

. Describe the natural or man-made disasters that are day-to-day threats to the people of this and other states.

. List the necessities of life in order of priority.

. List and explain what the major body enemies are and how they threaten the body.

. Recognize the immediate physiological threats to the human body in emergency stress situations.

ACTIVITIES

Have students bring newspaper articles, pictures, books or stories which relate survival episodes in the backcountry or during man-made or natural disasters.

Discuss with the students:

1. What were the most pressing problems?
2. How did the people find solutions?
3. Could this have happened in this state or area?
4. What things did the people have to do without?
5. Discuss various hardships and the abilities of the students to cope with those hardships.
6. Discuss various geographic locations (national and world-wide) which have suffered major disasters.
7. Could this be related in any way to nuclear warfare?

Discuss various ways to prevent loss of life and property. (i.e., preventive search and rescue, disaster awareness education.

Pick a traditional "living-off-the-land" survival story (Robinson Crusoe, etc.) and compare it to a modern day account of disaster or emergency.

A good activity is to collectively brainstorm the necessities of life, and then go back and list them in order of priority.

Make a complete list of what modern man needs to live and then what he needs to stay alive.

Use the Mountain and Desert Survival Problems from the Teacher's Resource Notebook to establish priorities and also, as a good survival leadership exercise. Relate this to natural and man-made disasters.

Use situation card games to prioritize activities in various situations.

Electronic game boards with buzzer or lighted correct answers are good memory exercises.

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Piers Paul Read, J. B. Lippincott Co., 521 Fifth Avenue, New York, New York

MAN VERSUS NATURE
Howard G. Earl, Fredrick T. Jung, Holt, Rinehart and Winston, Inc., 383 Madison Avenue, New York, New York

SURVIVING THE UNEXPECTED WILDERNESS EMERGENCY
Gene Fear, Survival Education Association, 9035 Golden Given Road, Tacoma, Washington 98145

THE BOOK OF SURVIVAL
Anthony Greenbank, The New American Library, Inc., P. O. Box 2310, Grand Central Station, New York, New York 10017

1001 QUESTIONS ANSWERED ABOUT NATURAL LAND DISASTERS
Barbara Tufty, Dodd, Mead Company New York, New York

DISASTER HANDBOOK
Solomon Garb and Evelyn Eng, Springer Publishing Company, Inc., 200 Park Avenue South, New York, New York

NUCLEAR SURVIVAL MANUAL, BOSDEC - THE CONCRETE CURTAIN
James R. Fairlamb, Drexel Winslow and Farrington, P. O. Box 55, Butler New Jersey

FILMS

EARTHWATCH

Dramatically juxtaposes the "two faces of earth" - one tranquil and benign, the other hostile and devastating. It explains the various natural or man-made disasters that threaten lives and property. The film also introduces the subject of preparedness.

Suggested Objectives:

Student objectives might include the following:

1. To gain knowledge of the earth's natural and man-made disasters.
2. To develop a positive attitude toward emergency preparedness.

Suggested Prescreening Activities:

Before viewing *Earthwatch*, students might do the following:

1. List things they might do to prepare for emergencies.
2. Investigate the interrelationships of weather, geography, and physical forces of the earth/universe.
3. Discuss preparedness as related to the various community agencies that handle emergencies.

The film may be shown without any preparation for viewing. The students then will have an opportunity for individual reaction without prediscussed ideas.

Suggested Postscreening Activities:

After viewing this film, the students might do the following:

1. Utilize strategies of evaluative questions to develop knowledge of emergencies and an awareness of the importance of preparedness.
2. Investigate the various physical forces that influence the earth, human life, and property.

3. Develop a simulated earthwatch system, and design a composite system or plan for the school community.
4. Prepare reports and presentations related to research.
5. Develop a map to plot the home state of each student (or that of a relative); identify the various natural and man-made disasters that are most likely to occur in each area. Work on this project can continue throughout the study.
6. Develop a feeling for the importance of the relationship of emergencies and preparedness.

If the students did not participate in prescreening activities, the teacher should ask the students to describe their reactions. Class discussions can be developed around the suggested prescreening activities listed previously.

TECHNOLOGICAL FAILURES

The film deals with failures due to miscalculations of technological capabilities related to appliances, autos, and energy. It presents suggestions for preparation and alternative behaviors.

Suggested Objectives:

1. To learn about the origins and needs of modern technology, and the effects of that technology on today's life-style.
2. Develop alternatives for total dependence on technologically oriented devices.
3. Learn how to prepare for and react to disasters that could result from technological failures.

Suggested Prescreening Activities:

Before students view the film, they might do the following:

1. Discuss the growth of technology and develop a rationale for the increasing dependence of people on technological developments.
2. Identify the various developments that are truly essential to basic human needs and those that can be eliminated as non-essential.
3. Compare personal life-styles with those in less developed areas in terms of technology's contributions.

Suggested Postscreening Activities:

After students view the film, they might do the following:

1. Identify and record on a map, areas of the country or world which are most susceptible to various kinds of technological failures. Also identify those areas that are least susceptive to such failures.
2. Develop a comparative report and visual display of differences in life-styles in the identified areas.
3. Conduct experiments and record reactions to a systematic elimination of appliances, energy sources, and other items related to technology to determine the degree to which they may be eliminated. What things are non-essential to a comfortable life-style? What values are or are not necessary in determining what is a pleasing life-style?
4. Develop a chart of technological dependencies and list energy consumption, length of time used and costs, then apply a value to each through discussion of results. Which are necessary? How much can consumption be reduced? What are the energy and cost savings? Made a values-oriented study of the problem by relating convenience, labor expended, dependency, and luxury.
5. Develop plans to assist people in preparing for or reacting to disasters that may result from technological failures. Publish and demonstrate the plans.
6. Develop an analysis of advertising messages related to the purchase of devices that may con-

tribute to technological failures. Include ideas of how the readers, listeners, and viewers are "sold" on the necessity and luxury of new devices. Are these devices really necessary in relation to their energy consumption, cost, and potential effects on the environment?

7. Develop a values clarification exercise illustrating how personal responsibilities in decision making are related to the impersonal aspects of technology.
8. Develop a list of ways that computer technology affects modern life and industry. How has this new technology affected the economy.

MOUNTAINS DON'T CARE

Alarmed by the number of climbing accidents, the Mountain Rescue and Safety Council undertook production of an educational movie to acquaint the public with mountain travel hazards. It also depicts two experienced mountaineers showing younger climbers how to cope with hazards such as terrain and weather. Fairly old movie but good sound safety information.

OTHER RESOURCES

Local Search and Rescue Organizations and volunteers.
Sheriff or designated Search and Rescue representative.
Local Emergency Services Director.
Emergency medical teams.

SECTION II

MENTAL ASPECTS OF EMERGENCY PREPAREDNESS

OBJECTIVES

At the completion of this section the student will be able to:

- Recognize the fact that emergencies can happen to anyone at any time. (Traveling by auto, boat, airplane, on foot, at work, in the city, the mountains or even in the home.)
- Relate the importance of mental effectiveness and capabilities in any survival or emergency situation.
- Describe how self-image and self-reliance can affect any situation (i.e., personal relations, everyday activities, emergency stress).
- Differentiate between Positive Mental Attitude and Proper Positive Mental Attitude.
- Relate the importance of Proper Positive Mental Attitude in everyday living to emergency situations
- Distinguish between the two aspects of Proper Positive Mental Attitude. (Will to live--problem-solving ability.)
- Evaluate the circumstances of a situation to identify any potential problems.
- Establish the boundaries of their own comfort zones and know how to expand them regularly.
- Recognize the physical and mental effects of fear and anxiety.
- Utilize several active ways to combat fear from both an individual and group standpoint.
- List the common fears which lead to unmanageable situations.

ACTIVITIES

It must be emphasized that this is perhaps the most important and difficult section to teach in this entire program. The concepts and philosophy stressed here are primarily mental in nature and require a good deal of thought process. A positive enthusiastic approach is imperative.

Establish a discussion related to accepting the possibility that an emergency could happen to any of the students; (brainstorm possibilities and the probable effects-individual student reaction, could they cope?)

Discuss everyday activities and reactions (personal relations, problems, decisions, etc.) and how these are reflected in behavior during an emergency.

Relate personal stories of students who have observed accidents, disasters or emergencies of any kind.

1. What was the reaction of those involved?
2. Did a leader or person in charge emerge?
3. Did the general behavior seem to be contagious?

4. Was there, or could there have been any preventive measures taken?

5. Was anybody prepared to cope with the situation?

(If the students do not seem to have enough experiences, call on fellow teachers.)

Tentatively plan a particularly difficult outing or trip with a number of probable dangers (i.e., combination raft, canoe and hiking trip, motor trip up the Alaskan Highway, etc.).

1. What is the worst that could happen?
2. Discuss all aspects of preparedness.
3. Discuss the importance of a basic plan with back-up and contingency plans.
4. Relate this to mental preparedness and functioning within one's comfort zone.

Establish a common comfort zone which everyone in the class can relate to; record some soft popular music on a cassette with which all of the students are familiar, and play it during this exercise. Have each student close his eyes and think of a very favorite location and activity (duration about 3 to 5 minutes). Stress relaxation and total concentration. Use this as an example of mental rest and relaxation.

1. Explain the importance of mental rest and its relationship to a person's comfort zone.
2. Discuss how the ability to retreat to a mental comfort zone is important in times of stress.
3. Stress the importance of concentration and total relaxation.

Brainstorm various fears that people develop and have as they go through life.

1. Ask different students to relate some of their basic fears.
2. What might be the derivation of these fears?
3. Discuss fear as a normal human emotion as opposed to one that individuals might be ashamed of in times of stress.
4. Brainstorm ways to recognize fear in oneself as well as others. (Group as well as individual.)
5. Brainstorm ways to combat fear in oneself as well as others.
6. Discuss the effect of modern media, advertising and movies on many of the fears that modern man has today.

Record or write an excerpt from a story that deals with a crucial time during or just before an emergency, (i.e., conversation or events leading up to a victim suffering from hypothermia; conversation during and just after an earthquake, etc.). It is also possible to record the dialogue from the movies, "By Nature's Rules" or "Thermal Wilderness" for use in this exercise. Write individual sentences or small paragraphs from the dialogue or text source on separate sheets of paper so that each student has one. (No student should know what the others in class have on their sheets.)

Begin by having a student (at random) read aloud what he has on his sheet. Once a student has divulged his part of the total narrative, collect the respective sheets so that they may not be referred to again. At the end of each student's narrative, discuss and ask questions relative to what is actually happening in the situation.

1. What kind of mental picture has been established at the end of each narration?
2. Look for hasty conclusions, assumptions and false impressions.
   A. What type reactions do these mental shortcuts precipitate.
   B. What could be the outcome of taking these mental short cuts.

Extend the discussion until everyone has had an opportunity to contribute. Then, read the total narrative as it was in its original form.

1. Make comparisons from what was thought to have been happening and what actually was happening.
2. What other situations could have been developing?
3. Stress the need for a complete picture on making decisions.
4. What were the primary indicators that something was wrong?
5. What types of pictures were depicted in the students' minds as the narrations were given?
6. Does this show a need for mental alertness?
7. What part does psycho-pictography play in this exercise?

It is important to explain how this all ties into mental preparedness and how a person's mind can be his or her worst enemy.

A simple demonstration of what mental preparedness is and what it can do for a person can be done in the classroom. Preplan with a teacher or student from another class to tip over a garbage can loudly, or make some very loud unexpected noise at a predetermined time. Note the general reaction of the class and tell the class that sometime in the next three class periods that you are going to do it again. After the second time, it should be evident what the mental preparedness has done to everyone's reaction. (Note: the louder and more unexpected the noise, the better the reactions to this exercise.)

Procure the record set of "War of the Worlds", and discuss all of the ramifications that this incident had at the time of the original broadcast.

1. How does this incident relate to an emergency of large proportions.
2. This is a graphic example of how the mind can be a person's worst enemy.

Discuss the power of positive suggestion and how it works in our everyday lives as well as in an emergency. (Also, the impact of negative suggestions.)

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STRESS AND BEHAVIOR
Seymour Levine, (Reprinted from Scientific American) W. H. Freeman and Co., 660 Market Street, San Francisco, California 94104

999 SURVIVED - ADTIC NO. T-100
Arctic Desert Tropic Information Center, Air University, Maxwell AFB, Alabama

FIRST AID FOR PSYCHOLOGICAL REACTIONS IN DISASTERS
American Psychiatric Association, 1700-18th Street N. W., Washington, D. C. 10009

SURVIVING THE UNEXPECTED WILDERNESS EMERGENCY
Gene Fear, Survival Education Association, 9035 Golden Given Road, Tacoma, Washington 98445

THE ART OF SURVIVAL
Cord Christian Troebst, Doubleday & Company, Inc., Garden City, New York New York

FILMS

PSYCHOLOGICAL RESPONSE

The film *Psychological Response* provides a view of how three people reacted to three emergencies with which they were associated. As they recall their experiences and reactions, a counselor attempts to help them assess their feelings and move toward a changed attitude about their guilt feelings.

Suggested Objectives:

Students might have the following objectives:

1. To learn to distinguish between behaviors resulting from rational behavior, panic and hysteria.

2. To develop plans and procedures and establish priorities related to personal possessions and human feelings in preparing for a variety of emergencies.
3. To learn how and where people can obtain help related to mental and emotional needs.
4. To understand that emotional responses are varied and involve degrees of severity.

Suggested Prescreening Activities:

Before students view the film, they might do the following:

1. Discuss psychological implications and reactions students may have encountered in emergency situations.
2. Discuss alternative behaviors that may have changed the outcome. Use positive or detrimental possibilities.
3. Discuss the degree of emotionalism in situations described to determine potential needs for further exploration.

Suggested Postscreening Activities

After students view the film, they might do the following:

1. Research and report on disasters emphasizing the psychological response of people. Use concepts of rationality, hysteria, panic, etc.
2. Use some of the above situations to develop vignettes for role-playing in a variety of alternatives.
3. Develop radio or TV scripts to provide information on emergency preparedness to avoid emotional trauma. Use disaster situations common in the area.
4. Prepare contingency plans for disaster preparedness, including movement to safety, development of priorities related to human and nonhuman needs, and availability of resources for assistance. Publish, discuss, and demonstrate plans for the school or community.
5. Conduct mock group counseling sessions using values clarification techniques, group dynamics, and simulation games to explore psychological reactions to emergency situations peculiar to the area.
6. Plan and conduct simulated disaster drills other than those commonly used in your school (i.e., fire and nuclear attack). Invite emergency personnel from the community to critique the program in terms of physical and emotional needs.

SURVIVAL STRESSES (Air Force Training Form A.F. TF 1-5375)

This film graphically illustrates all of the probable stresses which might be encountered in a survival situation. Excellent animation section covering stress effects on the body. Military oriented but good information.

Suggested Objectives:

In viewing this film, the students should be familiar with:

1. The many stresses that an individual might be subjected to in a survival situation.
2. The possibility that stresses can build up and act in unison to create a life threatening situation.
3. The fact that mental stress factors are just as important as physical ones.

Suggested Prescreening Activities:

1. Brainstorm all the factors that might affect any survival situation.
2. Discuss how varying terrain and geographic location can affect these stresses.

Suggested Postscreening Activities:

1. Discuss to what extent the stresses disclosed could be related to natural and man-made disasters.
2. Assign a short paper to each student to express what effects mental stress has on all the rest of the factors.

THE LOST HUNTER (Film Originals, Boise, Idaho 83705)

This film dramatizes a very real situation in which a hunter is separated from his companion while hunting and becomes lost. Illustrates well the mental drawbacks of fear and panic. An older film but very good, basic information.

Suggested Objectives:

Each student should realize that:

1. Panic behavior precipitates further complications in an emergency.
2. Fear is normal but can be controlled.
3. The mind plays a big part in the outcome of any stressful situation.

Suggested Prescreening Activities

Before viewing the film students should:

1. Relate and discuss any student experiences in which individuals were lost or disoriented in an unfamiliar area.
2. Relate and discuss some of the common fears which might be present if an individual were to become lost.

Suggested Postscreening Activities:

After viewing the film, students should relate and discuss:

1. The primary causes of the incident depicted in the film.
2. At what point did the hunter gain control of the situation?
3. To what extent was the situation affected by mental attitude?
4. Comfort zone as it applies to everyday living and situations such as depicted in the film.

OVERCOMING FEAR

Psychological structure of fears, how they can be overcome, how unconscious conditioning has a part in building fears, how deliberate and conscious conditioning has a part in building fears, how deliberate and conscious conditioning can overcome them by substituting a more desirable response pattern. Slightly old but very good information. Cornet Films, Chicago, Ill.

Suggested Objectives:

In viewing this film, each student should recognize the following:

1. The potential dangers in fears.
2. Boundaries of their own comfort zones.
3. Basis for many of our fears today.

Also, each student should be familiar with:

1. Several methods of combating fears.
2. Signs and symptoms of fear in ourselves and others.

Suggested Postscreening Activities:

1. Have the student relate their common fears and how these could have affected some emergency situation.
2. After identifying common fears, discuss what could have caused them and possible solutions to overcoming them.

The following commercial films are possibly available for school use and should be playing at community theaters and on television for the next few years. They all have tremendous emergency preparedness education lessons and could prove valuable tools for assignments and discussion.

POSEIDON ADVENTURE
EARTHQUAKE
TOWERING INFERNO
WAR OF THE WORLDS - Record dramatization)
JEREMIAH JOHNSON
GRIZZLY ADAMS
CHALLENGE TO BE FREE
A MAN CALLED HORSE
HEY, I'M ALIVE

SECTION III

PHYSIOLOGICAL ASPECTS OF SURVIVAL

OBJECTIVES

At the completion of this section, the student will be able to:

- Describe the three environments pertinent to any survival situation.
- Relate and understand the five principle ways that heat is lost from the body.
- Describe the signs and symptoms of initial dehydration as well as salt or chemical imbalance and deficiency.
- Understand how the body's water level fluctuates and its effect on chemical balance and total body function.
- Define energy as it relates to any emergency situation.
- List three basic kinds of energy developed within the human body.
- Evaluate energy expenditure as it relates to emergency and stress situations with special regard to mental attitude.
- Briefly explain some of the adverse physiological effects of special medical problems and medications in physically stressful situations. (i. e., circulatory problems and medications at high altitude.)
- Differentiate between fatigue and exhaustion.
- Explain what happens to the body under conditions of reduced oxygen and understand the phenomenon by which it compensates. (Time periods involved.)
- Relate the symptoms of hyperventilation.
- Understand why pain is so vital to body function.

ACTIVITIES

Compare the human body to an automobile in a brainstorming session. List all the ways they are alike and all the ways they are different.

Example: both need fuel to operate, a cooling system to maintain constant temperature, regular maintenance, electrical systems, a central control system etc.

Compare the triangle of life to the fire triangle. (What are the three basic components of each? What happens when anyone of the components is reduced or eliminated?)

Use the water can demonstration on body heat loss - Procure six one-gallon cans (old paint thinner or gasoline cans); dress two in wool, two in cotton; leave one plain, and dress the last in both cotton and wool with a plastic cover and ground insulation. These will simulate six individuals dressed differently in the same environment. Fill all of the cans with approximately 100 degree water and place them outside in a shady, windy spot. Wet down one of the wool coverings and one of the cotton

coverings. Periodically check the temperature of each can with a photographic developing thermometer to determine which can drops fastest in temperature. Radiation, convection, and conduction will remove heat very rapidly, to simulate the same effect on the human body under similar conditions.

The same type of experiment can be done under heat lamps or in the hot sun. This will serve to show that retention of clothing in the heat is beneficial and should be advocated.

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L.G.C.E. Pugh, British Medical Journal 2:657, 1969

EXPLORING ENERGY
B.R. Spitz, M.D., San Diego Mountain Rescue Team Educational Brochure, P.O. Box 267, La Jolla, Cal. 92307

SURVIVING THE UNEXPECTED WILDERNESS EMERGENCY
Gene Fear, Survival Education Association, Golden Given Road, Tacoma, Washington

PHYSIOLOGY OF MAN IN THE DESERT
E. F. Adolph & Associates, Hafner Publishing Co., 31 E. 10th Street, New York, New York 10003

MOUNTAIN MEDICINE AND PHYSIOLOGY
Clarke, Ward, Williams (edited), Alpine Club, 74 South Audley Street, London, W. I.

FILMS

SURVIVAL STRESSES
Air Force training film A.F. TF 1-5375

This film graphically illustrates all of the probable stresses which might be encountered in an emergency or survival situation. Excellent animation covers the stress and physiological effects of survival. Oriented toward military pilots but excellent information for students and teachers.

Suggested Objectives:

The student should be familiar with:

1. The total number of factors, both physiological and mental, which affect any emergency situation.
2. The basic functions of the primary systems in the body with respect to how they protect and preserve life.
3. The "whole man" concept of survival which relates the mind and body into one closely-knit function.

Suggested Prescreening Activities:

1. Discuss the main stress factor that might be involved in each of the major climatic areas (i.e., arctic, desert, jungle, mountain, inner city). Is it wise to be concerned with one major factor?
2. Discuss terrain as a factor and how it affects the other factors involved.

Suggested Postscreening Activities:

1. Discuss whether it is realistic to only be concerned with one main factor.
2. Which of the factors mentioned in the film would be prevalent in inner city emergency or natural disaster.

3. Discuss all of the ramifications of having a general understanding of the body and how it functions.

HUMAN BODY: THE BRAIN

The brain, about three and one-fourth pounds of sensory, associative and motor neurons, is the central organ of the nervous system and regulator of all voluntary and involuntary actions in the body.

Suggested Objectives:

The student should be familiar with:

1. The importance of maintaining the brain's proper operating function by safeguarding the body's temperature since the brain is central control for all activity and function.
2. The similarity of the human body to any one of a hundred centrally controlled machines such as the automobile. Recognition of this concept will help insure a general understanding of how the body functions.

Suggested Postscreening Activities

1. Use the brainstorming activity of comparing an automobile and the human body with regard to the electrical system, central control center, maintenance and breakdown.
2. Discuss why a proper positive mental attitude is of very little value if a person's problem-solving ability is not at its peak due to improper body temperature.

FILMS

YOUR BODY AND ITS PARTS

This film provides an overview of human physiology, showing that body parts working together to perform one job form a system. Introduce muscular, respiratory, circulatory, skeletal and nervous systems.

YOUR SLEEP AND REST

Animation and analogies show important body processes. This film's emphasis is placed on the need for body cells to replenish their energy and building materials and to eliminate wastes.

WONDER ENGINE OF THE BODY

This film explains anatomy, physiology and proper care of the human heart. Slightly old but good information.

YOU THE LIVING MACHINE

This film compares the human body to a machine which needs fuel to run, maintenance and sometimes repairs. A manufactured machine cannot take care of itself but man's intelligence permits him to take good care of his own intricate machine.

CONTROL OF BODY TEMPERATURE

This film explains the mechanism of body temperature regulation. The phenomena associated with body temperature in man is shown also. Along with this, the role of food, nerves, glands and muscles is brought out.

HOW THE BODY USES ENERGY

This film explains why energy is required to maintain all the physiological processes of digestion (the reduction of complex molecules into simpler ones, the oxidation of food products and energy production.

HEAT AND ITS BEHAVIOR

Clarifies basic concepts concerning the nature of heat - its sources, measurement and utilization. Explains the mechanisms of conduction, convection and radiation.

TRANSFER OF HEAT

This film illustrates and explains the principles by which heat is transferred (conduction, radiation, and convection).

The eight films above are short films which will serve to better illustrate how the body functions in its normal state. It is imperative to under-

stand normal function before abnormal function can be detected and safeguarded against. All of the functions illustrated in these films are vital in a survival or emergency situation, as well as everyday living.

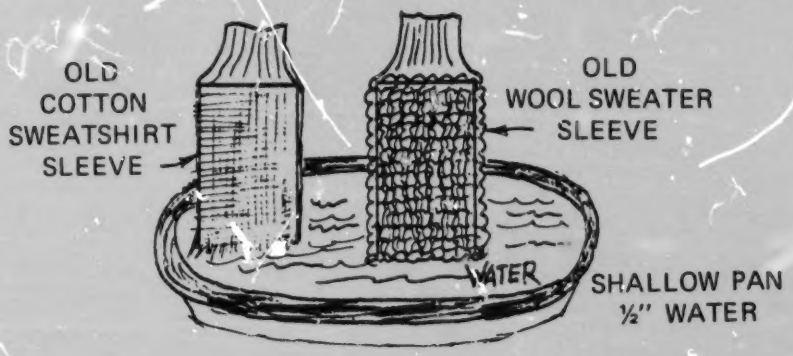
OTHER RESOURCES

Contact paramedic and emergency first-aid fire personnel to demonstrate CPR and other life-sustaining procedures and equipment.

Mountain Rescue Personnel trained in advanced EMT or paramedic training.

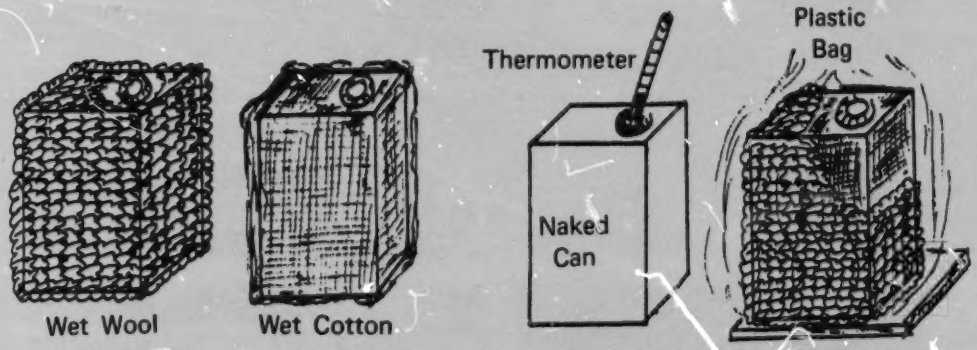
INTERESTING CLOTHING EXPERIMENTS

Most experienced outdoorsmen advise tenderfeet to wear loose fitting wool clothing. If you doubt their advice, try this experiment:



The water will wick up the cotton very quickly and remain wet. The wool gets wet where it is in the water. Wool has the unique property of retaining body warmth even when wet – dries quickly, and sheds water. The same wicking happens when you walk across a wet meadow and get your knees wet.

Get four 2-gallon metal cans. Dress three of them: one in wool, one in cotton, and one in cotton and wool with plastic shelter; leave one bare. Fill all four with 110° hot water. Place all cans in a shaded, windy spot outdoors. Record their temperatures each hour. Radiation, convection and conduction will remove the heat very rapidly and simulate their effect on the human body under similar conditions. This experiment has startled many persons because of the speed that one can lose its heat.



Put all 4 cans through a sprinkler-simulated rainstorm

SECTION IV

SURVIVAL PRIORITIES

OBJECTIVES

At the completion of this section the student will be familiar with:

- The concept of emergency "Time Lag" and how an individual involved in an emergency is affected by it.
- The importance of establishing a plan toward an ultimate goal.
- The importance of establishing priorities during an emergency based on priorities and necessities of life, and taking action on those priorities.
- Delegation of leadership and responsibilities according to individual capabilities and group needs.
- The typical mass reaction to disaster and emergency with regard to actions which must be taken. They must understand why immediate leadership is so important.
- The pros and cons of relocating or moving under adverse conditions.
- Some of the major survival factors to consider when assessing dangers and probable courses of action.

ACTIVITIES

Relate three hypothetical emergency situations in which people's lives or safety might be in jeopardy. Establish a degree of realism by maintaining probable and feasible situations. Be as diverse in the spectrum of emergencies as possible (i.e., an accident in the wilderness, a major disaster in the city or suburbs, a first aid situation at home, etc). Give each of the students an assignment to include:

1. What resources might respond to these emergencies.
2. Research how long it might take for help to reach an individual in these situations from time of incident to actual arrival on scene.
   A. This may involve talking to medic teams, search and rescue units, government disaster teams, fire departments, etc.
   B. Location is of prime consideration here, especially from the standpoint of inaccessability in backcountry or rural country areas. All response must be thought of in terms of time.
3. Are there any areas where no one might respond? What are the factors to consider if this should occur?
4. How important is the "Time Lag" factor in survival or emergency situations?

Gather together or compile a list of as many different types of emergency plans as the students can find or think of in several days. Discuss these questions:

1. Why were these plans established?
2. Try to create some good guidelines for emergency plans.

3. Why is it a good idea to have plans to follow?
4. Try to discern the ultimate goal of each of the above plans.
5. What part does the goal play and how important is it?
6. Look at your school disaster plan.
   A. Can it be improved?
   B. Is there any doubt whose responsibility lies where?

Pick an emergency and collectively, as a class, brainstorm what a step-by-step plan of action would be after priorities were established.

Contact local sheriff's offices, departments of emergency services and emergency response teams to establish whose responsibility lies where with regard to response when disaster strikes (in the city as well as in the country).

REFERENCES

1001 QUESTIONS ANSWERED ABOUT NATURAL DISASTERS
Barbara Tuddy, Dodd and Mead, New York, New York

DISASTER HANDBOOK
Solomon Garb and Evelyn Eng, Springer Publishing Company, Inc., 200 Park Avenue South, New York, New York

ANATOMY OF SURVIVAL
Eileen Crimmin Science Digest, 1966, series of seven articles on natural and man-made disasters

LEADERSHIP AND MOTIVATION
J. Clayton Lafferty, Experimental Learning Methods, 39819 Plymouth Road, Plymouth, Michigan 48170

STRESS AND BEHAVIOR
Seymour Levine, (reprinted from Scientific American) W. H. Freeman and Company, 660 Market Street, San Francisco, California 94104

FILMS

DATE WITH DISASTER
1971, 30 min., 16mm, color, producer USOEP, Title No. 002061

Shows how the hospitals in one city prepared to react in any medical emergency. When time is so precious in an emergency, preparedness can mean the difference between life or death.

DISASTER AID - PUBLIC HEALTH ASPECTS
1955, 11 min., 16mm, B&W, color, producer USNMAC, Title No. 273400

Explains the health problems created by natural disasters and the method used to solve these problems. Uses flooding as an example and shows the role of local, state and federal health agencies in combating the resultant public health dangers.

WITHOUT WARNING
1970, 12 min., 16mm, color, W.S.U. Film Library

A serious explosion in a city and a train collision in open country exemplifies typical disaster situations; how members of various health professions assist in such a crisis.

THE FACE OF DISASTER
1965, 10 min., 16mm, B&W, Producer USOCD, Title No. 315075

Emphasizes the role of community welfare services in helping to meet emergencies. Highlights natural disasters - the great Alaskan earthquake of 1964, the floods of 1965, the devastation wrought on Palm Sunday when 37 tornadoes whipped through the Mid-West.

THE FIVE DAY'S OF BETSY
1966, 12 min., 16mm, B&W, Producer USOCD, Title No. 001693

Shows the havoc wrought by Hurricane Betsy as it hit the Florida & Louisiana mainlands and the efforts of civil defense, the military, and government and private welfare agencies in assisting the people during the disaster.

SECTION V

SPECIFIC EMERGENCY SITUATIONS

PART I - COLD WEATHER EMERGENCIES

OBJECTIVES

At the completion of this section, each student will be able to:

- Relate the classic symptoms of hypothermia and the predisposing factors which precipitate it.
- Understand the insidious effects of hypothermia and why it is so dangerous.
- Give the standard first aid for the hypothermic victim.
- Relate the common symptoms and predisposing factors of the following cold weather related maladies:
  - Carbon Monoxide poisoning
  - Anoxia
  - Snowblindness
  - Frostbite
  - Chilblains
  - Immersion foot
- Administer standard first aid for each of the above cold related injuries.
- Estimate approximate temperate equivalent based on given temperature and winds.

ACTIVITIES

Use the water can demonstration on body heat loss as mentioned in Section III activities.

1. Notify local Mountain Rescue Organizations to relate, in class, some of the major incidents where hypothermia and other cold weather associated injuries were involved.
2. Make an assignment whereby the students collect as many newspaper or media accident reports concerning outdoor activities as possible. Try to investigate all the factors that led up to the actual incident. What percentage could have been hypothermia caused. Explore this further with any other complications.
3. Take several potatoes (large) and allow them to partially freeze. Slice two of the potatoes in small slices and examine the tissue, both in the frozen state and in the normal condition, under a microscope. Note any differences. Now allow the frozen potatoes to thaw out. Slice into thin slices and examine the differences in cellular structure. This experiment will represent the graphic destruction of cellular structure as a result of freezing. (Other types of vegetables may be compared.)
4. Allow several students to soak the fingers on one hand in warm water for up to 30 minutes or more. The skin should appear slightly wrinkled and perhaps somewhat white. Allow the students to examine this condition and then have them lightly rub the finger tips over a rough piece of sandpaper. Note the

softness of the tissue and how easily the skin is scratched or damaged. Now have the students run the finger tips of their other hand over the sandpaper. Note the difference in hardness of the skin and how difficult the skin is to scratch or damage. This demonstration will serve to show how the skin of the feet is easily damaged when subjected to immersion foot conditions.

5. Demonstrate wind chill factor by mounting a thermometer in a convenient place over a desk. Read and notate the temperature of the room. Now place a fan on the thermometer and note the temperature drop. An additional part of the experiment could be to introduce a humidifier behind the fan and see what the difference moisture makes. This will serve to demonstrate the effect of wind in chill factor. (Variable speeds on the fan will give graphic representation of how much chill increases with the speed of wind.)

REFERENCES

COLD INJURY
Josiah Macy, Jr. Foundation (Six volumes), University Microfilm, 300 N. Zeeb Road, Ann Arbor, Michigan

SURVIVING THE UNEXPECTED WILDERNESS EMERGENCY
Gene Fear, Survival Education Association, 9035 Golden Given Road, Tacoma, Washington

MOUNTAINEERING MEDICINE
Fred T. Darvill, Jr., M. D., Skagit Mountain Rescue, P. O. Box 122, Seattle, Washington 98111

MOUNTAIN MEDICINE PHYSIOLOGY
Clarke, Ward, Williams, Alpine Club. Reprinted through permission by Mountain Safety Research, Inc., 631 South 96th Street, Seattle, Washington 98108

ACCIDENTAL HYPOTHERMIA, Part I
Warren C. Hunter, Northwest Medicine, P.569, June 1968

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Warren C. Hunter, Northwest Medicine, P.735, August

ACCIDENTAL HYPOTHERMIA
Northwest Medicine, P. 837, September

ACCIDENTAL HYPOTHERMIA IN WALKERS, CLIMBERS, AND CAMPERS: REPORT TO THE MEDICAL COMMISSION ON ACCIDENT PREVENTION
British Medical Journal, 1;123, 1966

COLD STRESS AND MUSCULAR EXERCISE, WITH SPECIAL REFERENCE TO ACCIDENTAL HYPOTHERMIA
British Medical Journal, P. 333, May 1967

FROSTBITE
Bradford Washburn, Museum of Science Boston, Massachusetts

HEAT AND COLD EFFECTS AND THEIR CONTROL
Doug H.K. Lee, U.S. P.H.S. Public Health Monograph #72

HYPOTHERMIA: KILLER OF THE UNPREPARED
Theodore G. Lathrop, M.D., Mazamas, 909-19th Avenue, Portland, Oregon 97209

RAPID ACTIVE EXTERNAL REWARMING IN ACCIDENTAL HYPOTHERMIA
Fernandez, John P. Jama, 212:153, 1970

THE MANAGEMENT OF ACCIDENTAL HYPOTHERMIA
Zingg, Walter, Canada Medical Association, 96;214, 1967

THERMAL, METABOLIC, BLOOD AND CIRCULATORY ADJUSTMENTS IN PROLONGED OUTDOOR EXERCISE
Pugh, L.G.C.E., British Medical Journal, 2:657, 1969

TREATMENT AFTER EXPOSURE TO COLD
The Lancet, P. 1376, December 1971

FILMS

FROSTBITE AND SNOWBLINDNESS

Color, 11 min., 1967

Discusses in detail frostbite and snowblindness and covers prevention, recognition, causes and treatment of both conditions. Sterling Educational Films, 241 E. 34th Street, New York, New York 10016

BY NATURE'S RULES

Color, 30 min., Jim Lawless, Motion Picture Consultants, Inc. or SAFECO Insurance Company, Seattle, Washington 98125

This is an excellent commentary on the greatest danger an unprepared outdoorsman will face - hypothermia/exposure. The story shows a group of five hikers starting out on a sunny, autumn day and within six hours they are confronted by a winter storm. Several members of the party became hypothermic and were saved only by the experience and knowledge of one quick-thinking individual. The film explains what hypothermia is, the early symptoms and warning signs, prevention, and proper field treatment. This film is a must for anyone who ever steps outside of his artificial environment into the potentially hazardous natural environment.

Film Critique:

Why was each person affected the way he or she was?

Don
Peter
Martin
Linda
Jill

1. When should they have stopped and corrected the weather's potential effects?
2. What condition finally appeared to make the group recognize their problems?
3. How could they have improved on the treatment given to the hypothermics?
4. Who appeared to be the original leader of the group?
5. Who finally became the leader and why?
6. Leadership comments.
7. General comments.
8. Film available through:

Mr. Jim Lawless,
Motion Picture Consultants, Inc.
1545 N.E. 130th Street
Seattle, WA 98125

SAFECO Insurance Company

SURVIVAL IN THE WINTER STORM

Color, 27 min.

This film is intended to inform the public of the dangers inherent in severe weather conditions and how they can prepare for them. It serves not only as a refresher course for those living in states where storms are an accepted way of life, but also gives valuable information to those persons living in normally warm areas who find adjusting to such conditions difficult.

The meaning of the terms "watch" and "warning" and the necessity for emergency planning by local governments are also discussed.

Released November 1974 by the Defense Civil Preparedness Agency. Can be purchased from:

National Audio-Visual Center
National Archives and Records Svc.
Washington, D. C. 20409

WINTER STORM

Defense Civil Preparedness Agency "Your Chance to Live" Series

The film illustrates the many dangers of winter storms, using a short story by Jack London, "To Build a Fire", as a vehicle for showing the tragic circumstances that are possible during winter storms.

Suggested Objectives:

Viewers of the film might have the following objectives:

1. To understand the concept of cold, its related conditions and environmental dangers.
2. To gain a knowledge of how to

prepare against the dangers of cold weather and winter storms in both rural and urban areas.
3. To learn about different kinds of winter storms and their cause and effect relationships.

Suggested Prescreening Activities:

Before viewing the film students might do the following:

1. Discuss personal experiences related to winter activities, weather comparisons in various areas, and environmental changes which require man to adapt.
2. Discuss a variety of preparations individuals may undertake for winter travel and recreational activities.

Suggested Postscreening Activities

After the students have seen the film, they might do the following:

1. Plot areas that are likely to be affected by severe winter weather. Write a definition for "severe winter conditions."
2. Research winter weather conditions in various geographical areas. Collect pictures and articles for exhibits and reports.
3. Prepare a winter weather emergency plan for rural or urban regions, and publish it for use by all students.
4. Prepare a report on reaction activities, behaviors, and emergency needs related to these activities for both young people and adults.
5. Invite resource people to explain and discuss winter survival techniques. If possible, practice these techniques on a survival hike.

PART 2 - HEAT EMERGENCIES

OBJECTIVES

At the completion of this section the student will be able to:

- Understand the mechanisms of heat gain in relation to physical activity and hot environments.
- Relate the primary effects of dehydration and the initial symptoms which are indicative of the process.
- Give the basic symptoms and predisposing factors in addition to the common first aid for each of the following hot weather related maladies:
  - Sunburn
  - Heat Weakness
  - Heat Cramps
  - Heat Exhaustion
  - Heat Stroke
- Discuss the concept of acclimatization and how it relates to hot and cold environments.

ACTIVITIES

Water can demonstration on body heat gain - procure four one-gallon cans (same as for hypothermia demonstration); dress one in wool, one in cotton, one in synthetics, and leave one plain. These will represent individuals dressed differently in the same environment. Fill all the cans with approximately 100 degree water and place them directly in the sun or under a heat lamp. Periodically check the temperature of each can with a photographic developing thermo-

meter to determine if any one of the cans is gaining faster than the others. Experiment with different types of shade and color of clothing.

It is possible to demonstrate the two principle types of hot environments in which heat disorders are common. First would be that of high humidity. A trip to a steam room would graphically demonstrate this. Alternatives to this would be the shower or locker rooms after a P.E. class had showered, or a heater and humidifier both placed in a confined space. Light exercise such as isometrics while standing in this environment will serve to show the extra load which is placed on the body. In addition, it is good to show the general uncomfortableness which accompanies this type of heat. Second would be a dry, hot environment. A sauna is ideal. However, any heater in a confined space will provide the same effect. These demonstrations will give the student a better understanding of how heat affects the body.

REFERENCES

HEAT STRESS AND HEAT DISORDERS
Leithead and Lind, 1964, Comprehensive Review

PHYSIOLOGY OF MAN IN THE DESERT
E.F. Adolph and Association, Hafner Publishing Company, 31 East 10th Street, New York, New York 10003

SURVIVING THE UNEXPECTED WILDERNESS EMERGENCY
Gene Fear, Survival Education Association, 9035 Golden Given Road, Tacoma, Washington

THE PHYSIOLOGY OF HUMAN SURVIVAL
Dr. O.G. Edholm and A.L. Bacharach, Academic Press, Inc., 111 Fifth Avenue, New York, New York 10003

AIR FORCE MANUAL 64-3
Survival, Department of the Air-Force, Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402

FILMS

THE THERMAL WILDERNESS
Color, 28 min.
This 1975 film depicts heat impairments and the precautions one should take to prevent their becoming heat emergencies. Excellent film on the signs and symptoms of heat distress of any kind.

Jim Lawless Motion Picture Consultants, 1545 Northeast 130th Street, Seattle, Washington

HEAT WAVES
The film shows the damaging effects of excessive heat. Methods of protecting oneself from the sun are shown. The film illustrates what can happen to people as they work and play in environments where excessive heat may be common.

Suggested Objectives
Viewers of the film might have the following objectives:

1. To learn about the concept of heat, its related conditions, and environmental dangers.
2. To gain knowledge of the causes and effects of heat-related dangers during work and play.
3. To learn how to prepare oneself against possible dangers from excessive heat.
4. To be able to identify geographical areas where excessive heat can be expected.
5. To learn how people adapt to the environment in those areas.

Suggested Prescreening Activities
Before this film is shown to the class, students might do the following:

1. Discuss experiences related to work and play during times of extreme heat. Students can tell how they felt, how they behaved, how they dressed, and what other adaptions they made.
2. Discuss the cause-and-effect relationships of extreme heat on humans, animals, plants, and structures.

3. Describe methods of adapting oneself for protection from extreme heat.

Suggested Postscreening Activities:

After viewing this film the students might do the following:

1. Continue work on the disaster preparedness map and plot areas, other than deserts, which are likely to be affected by extreme heat. (Deserts should be treated separately because of their obvious characteristics.)
2. Make a comparison chart showing temperatures in places where excessive heat occurs.
3. Develop plans for travel, living or playing in areas that have high temperatures.
4. Develop a chart of temperatures to show the differences between areas of hot weather and areas where excessive heat occurs. (The comparative standard may be based on the effects of excessive heat upon living things.)
5. Develop charts or exhibits of materials concerning problems related to excessive heat in various areas of the country or world.
6. Develop plans for any adaptions that may be necessary in areas of high humidity.
7. Make a list of conditions, symptoms, and remedies for each problem resulting from excessive heat. Seek resource people to assist in developing contingency actions relating to these conditions.
8. Write reports or prepare radio or television skits on work or play activities, behaviours, and emergency needs relative to conditions of excessive heat.

FIRST AID FOR HEAT STROKE & HEAT EXHAUSTION

19 min., 16mm film, Color

Producer United States Navy, Title No. 000602

Demonstrates how to recognize and treat heat stroke and heat exhaustion cases. Designed primarily for use with Navy hospital corpsmen.

REGULATING BODY TEMPERATURE

(h-c; 22 min.; RS13.50; SS290.00)

Vertebrates maintain a stable body temperature despite considerable surrounding temperature changes. The film investigates this phenomenon in experiments with both human and animal subjects. Examples drawn from nature hint at the wide variety of physical, physiological and behavioral mechanisms animals use to adjust to heat or cold. An unusual experiment demonstrates that the hypothalamus is the seat of the body's temperature control center, a center so sensitive that it allows body temperature to fluctuate less than two centigrade degrees.

Collaborator: Robert E. Henshaw, PhD., Assistant Professor of Biology. The Pennsylvania State University. (Second edition of Control of Body Temperatures.) 1974; o.n. 3155; Encyclopedia Britannica Educational Corporation 425 North Michigan Avenue, Chicago, Illinois 60611

PART 3

- SURVIVAL IN WATER
- IMMERSION THROUGH ICE

OBJECTIVES

At the completion of this section the student will be able to:

. Recognize the principle dangers in most bodies of water to include:
  . Stream and river crossing
  . Ocean beaches and surf swimming
  . Marine animals
  . Cold water and immersion hypothermia
  . Immersion through ice

. Describe the necessary actions and

appropriate conditions for survival swimming.

. Describe the necessary actions and possible materials for emergency flotation.

. Relate the principle danger of immersion in cold water with counteracting measures which should be used.

. List the primary dangers of immersion through ice with procedures for rescue of self and others.

ACTIVITIES

Some of the following activities are designed to be conducted in a swimming pool:

1. Have students use old, clean clothing over swimsuits for in-the-pool experiments. The first activity should do nothing more than familiarize the students with the buoyancy and different feel of swimming with clothes. After this, each student should try to use various articles of clothing for flotation along with improvised pieces of other material that could be used for buoyancy. Experiment with various types of heavy clothing and boots, small pieces of wood, sponge rubber, seat cushion, a water jug or quart container, duck decoys, etc. This should give the student an idea of how little it really takes to buoy up the human body in water.

2. Practice the drown-proof method of survival swimming. Have the students try this with one arm held against the body and then with both arms against the body. Next try with only one leg, etc.

3. Fill a large tub with extremely cold water (30°-40°). Now experiment with variously clothed cans filled with 100° water (as in Section III Activities). Record how much faster the water extracts heat than just cold air. Set up a current in the water and try to record what effect this has on rate of heat loss.

4. Use a large container and a freezer to demonstrate the characteristics of various thicknesses of ice (i. e., clearness, opaqueness, brittleness, etc.)

5. Demonstrate through the use of infrared photographs the primary heat loss areas of the body. (These photographs may be available through research departments of colleges and universities along with several professional papers and discussions of body heat loss listed in the reference list.)

REFERENCES

THERMOGRAPHIC EVALUATION OF RELATING HEAT LOSS AREAS OF MAN DURING COLD WATER IMMERSION
J.S. Hayward, M. Collis, and J.D. Eckerson (University of Victoria, Victoria, Canada) Aerospace Medicine 44 (7):708-711, 1973

SUDDEN FAILURE OF SWIMMING IN COLD WATER
W.R. Keatinge, C. Prys-Roberts, A.J. Honour, J. Haight, British Medical Journal, February 1969

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W.R. Keatinge, British Medical Journal, December 1965

MAN IN COLD WATER
A brief presentation on cold water safety, University of Victoria, Dr. M.L. Collis, University of Victoria, Victoria B.C., Canada V8W 2Y2.

HOW TO SURVIVE ON LAND - SEA
U.S. Naval Institute, George Banta Company, Inc., Manasha, Wisconsin.

CFP LAND AND SEA EMERGENCIES
DC3-974, Information Canada, 171 Slater Street, Ottawa, Canada

SAFETY AND SURVIVAL AT SEA
E.C.B. Lee and Kenneth Lee, W.W. Norton and Company, New York, New York.

SEA SURVIVAL, A MANUAL
Dougal Robertson, Paul Elek, Lts., Ibex 54/58 Caledonion, London NI 9RN England

STAYING ALIVE
Maurice and Marilyn Bailey, David McKay Company, Inc., New York, New York

SUBMERGING VEHICLES
Institute for Road Safety Research, P. O. Box 71, Deernsstratt I, Voorburg 2119, The Netherlands

SURVIVAL IN COLD WATER
W.R. Keatinge, Western Printing Services, Ltd., Bristow, England

SUDDEN FAILURE OF SWIMMING IN COLD WATER
W.R. Keatinge, C. Prys-Roberts, A.J. Honour,
Journal, 1:480, 1969

LIFESAVING RESCUE AND WATER SAFETY
The American National Red Cross, Doubleday and Company, Inc., Garden City, New York

BASIC RESCUE AND WATER SAFETY
The American National Red Cross, Library of Congress Catalog, No. 74-81620

FILMS

WHY DROWN

Color, 25 min., visual tutor.
Simple techniques swimmers and non-swimmers can use to avoid drowning in any water emergency situation.

Audio Visual Center (W.S.U., Pullman Washington 99163

WATER RESCUE
B/W, 12 min.
Reviews rescue breathing methods for victims of drowning, discusses mouth-to-nose and mouth-to-mouth procedures, approaching the victim with and without rowboat, and how to give rescue breathing to a baby.

American Film Productions, Inc., 1540 Broadway, New York, New York 10036

SURVIVAL SWIMMING
B/W, 14 min.
Demonstrates skills of survival swimming, including floating, side and breast strokes and treading water. Illustrates cases where underwater swimming may be necessary and describes how to jump. Discusses the correct use of a tow line or rope ladder, correct ways of getting into and out of the water, and the use of clothing for support. From the *Learning To Swim* series.

International Film Bureau, 332 S. Michigan Avenue, Chicago, Illinois 60604

BE WATER WISE
Color, 25 min., U.S.A.F. Film No. 7. 149905, 1960
Film shows how to enjoy safe swimming whether in the pool, surf, lake, or in the 'ole' swimming hole. Points out consequences when safety rules are ignored. As scene shifts from controlled swimming facilities to unsupervised lakes and streams, a ground safety officer discusses the five basic principles of safe swimming.

SURVIVAL FOR SPORTSMEN
Color, 24 min., 1960
Demonstrates relaxation, breath control, body positions and locomotion for survival floating after a fall into deep water while wearing heavy clothing.

Washington State University Film Library, Audio Visual Center, Pullman, Washington 99163

WHY DROWN
Color, 25 min.
Television star Lloyd Bridges and

Murray Rose, Aussie Olympic swimming champion, joins forces to make this invaluable film on survival swimming. They demonstrate a simple five-step procedure which everyone, even the injured or poor floater, can use to stay afloat and live. Underwater cameras are employed to illustrate clearly the discarding of heavy shoes and clothing, then adapting some of their clothing to stay afloat. This film can be used by instructors to teach both swimmer and non-swimmer alike how to meet such emergencies.

Association Instructional Materials, 915 N.W. 19th Avenue, Portland, Oregon 97209

PART 4

- FIRE IN THE HOME

- FOREST FIRES

OBJECTIVES

At the completion of this section each student will be able to:

- Relate the most common causes of household fires.
- Outline a step-by-step plan of fire prevention for a home, proposed work facilities and other probable fire prone areas.
- List the major types of fires and the principle dangers that each pose in relation to putting them out, (i.e., electrical, petroleum, synthetics, etc.).
- Recognize the common fire hazards in high-rise buildings, and react with evasive actions or plans.
- Relate the common causes of forest fires today along with pertinent considerations should an individual become involved directly.

ACTIVITIES

Schedule a field trip to the local fire station or ask for participation from the fire safety inspector for class presentations or demonstrations.

Discuss the worth of fire drills in various institutions, schools and commercial buildings. How about private homes? Discuss worth of drills in regard to younger age groups.

Brainstorm a variety of approaches to new relevant fire safety programs. (Traditional approaches include posters, pictures, slogans, etc.)

REFERENCES

BUILDING PRACTICES FOR DISASTER MITIGATION No. 46
U. S. Department of Commerce, Superintendent of Documents, Government Printing Office, Washington, D. C. 20402

INDIVIDUAL LOCAL SCHOOL DISASTER OR FIRE PLANS

FIRE SAFETY BOOKLETS
Channing L. Bete Company, Inc., 45 Federal Street, Greenfield, Massachusetts 01301

A CLEAN HOUSE PREVENTS FIRE
FIRE TRAPS IN YOUR HOME
FIRE! WHAT WOULD YOU DO?
HOME FIRE CHECK LIST
THE CARELESS SMOKER

BUILDINGS
Construction and Building Management Journal, October, 1973

RECORD

Property Conservation Engineering Management, May-June 1973, Factory Mutual Engineering Corporation, Factory Mutual System, 1151 Boston-Providence Turnpike, Norwood, Massachusetts 02062

FILMS

FIRE PREVENTION AND THE HOME

Color, 25 min., U.S. Air Force Title No. 526700. Film discusses individual responsibilities in observing fire safety in daily living. Illustrates such hazards as overloaded wiring and electrical cords running under rugs. Outlines fire survival rules. Shows how carelessness and panic bring tragedy to a family.

Suggested Prescreening Activities:

Before viewing this film students might do the following:

1. Using the emergency preparedness map that was begun with a preceding film, *EARTHWATCH*, plot forest fires that have occurred in various locations. News reports and other reference material can be used for this study.
2. Discuss ways to determine the degree of devastation in terms of cost/benefit.
3. Discuss and plan a camping trip, and list the equipment necessary for reaction, safety and emergency preparations.
4. Discuss causes of forest fires and home fires.
5. List the short- and long-range effects of fires as related to cultural and ecological consequences.

Suggested Postscreening Activities

When the class has viewed *FOREST FIRE*, the students might do the following:

1. Revise plans and, if necessary, expand the emergency preparedness kit.
2. Publish a list of emergency equipment for students in the school.
3. Identify national parks and other recreation areas.
4. Study national park fire rules and regulations.
5. Develop displays, media presentations, and publicity campaigns.
6. Discuss ways to avoid forest and home fires. Rank ideas from the most effective to the least effective, using numerical values for each.
7. List the consequences of fires as related to people, animals and the environment. Show how these three categories are interdependent.

BAD DAY AT PLEASANT VALLEY

Color, 18 min.

Film relives the terror of an actual family trapped in a forest fire and their attempt to escape entrapment and destruction. A tragic lesson in fire prevention and safety. Pub. S.F.

Note: Any local fire service or library will have a large variety of films on fire safety.

PART 5

- EARTHQUAKES
- TSUNAMIS
- LANDSLIDES
- VOLCANOES

OBJECTIVES

At the completion of these sections, each student will:

- Understand what an earthquake is and its potential destructive powers.
- Be familiar with the highest potential earthquake hazard areas in the nation.
- Be able to list the common safety rules associated with preparing for an earthquake as well as during the shaking.
- Be able to list the safety rules to follow after the shaking has subsided, and during the aftershocks.
- Be familiar with the causes of tsunamis and their destructive powers.
- Be able to list the common warning signs of a tsunami and the safety precautions that are necessary.
- Be able to differentiate between landslides and mudflows as well as being able to recognize impending signs of slope failure or mudflow conditions.

ACTIVITIES

Make an assignment for students to investigate newspaper files, local library micro-film files and any records available through the media about local or state incidents concerning earthquake, tsunami, landslide, or volcano hazards. Try to gather information from as many points of view as possible (i.e. industry and private concerns, government, scientific, etc.). Subdivide a bulletin board and try to represent each of the various factions with their responsibilities and concerns represented.

Discuss the relationship between an earthquake and a tsunami, and differentiate between their warning systems.

Earthquake prediction has become much more refined than in the past. Discuss the problem of notification to the general public if an earthquake of disastrous magnitude was predicted. Whose responsibility is community awareness education with respect to natural disasters?

Geologically speaking, we are now in one of the most active mountain building eras in the history of this continent. Discuss the relationship of geological studies to modern disaster or emergency preparedness.

Discuss and point out the greatest physical hazards that exist in the general vicinity of the classroom in relation to earthquakes or other related phenomenon.

Invite a structural engineer to visit the classroom and discuss the common considerations that have to be made when constructing in an earthquake-prone area.

REFERENCES

LOCAL SCHOOL DISASTER PLAN

CRESCENT CITY DISASTER
Rosemary S. Young, P. O. Box 1307, Medford, Oregon

NATURAL HAZARDS
White, Gilbert, Fowler (Edited), Oxford University Press, 1974

DISASTER HANDBOOK
Garb, Solomon, and Eng, Springer Publishing Company, Inc., New York, New York, Second Edition 1969

NATURE ON THE RAMPAGE
Ann and Myron Sutton, J. B. Lippincott Company, Philadelphia and New York, 1962

1001 QUESTIONS ANSWERED ABOUT NATURAL LAND DISASTERS
Barbara Tufty, Dodd, Mead and Company, New York, New York

TSUNAMI, THE STORY OF THE SEISMIC SEA WAVE WARNING SYSTEM
U.S. Department of Commerce, Coast and Geodetic Survey, U.S. Government Printing Office, Washington, D. C. 20402

TSUNAMIS
Joseph Bernstein, Offprint from Scientific American, August 1954, printed by W.H. Freeman and Company, 660 Market Street, San Francisco 4, California

VOLCANIC HAZARDS AT MOUNT RAINIER WASHINGTON
Dwight R. Cradell and Donald Mullineaux, U.S. Government Printing Office, Washington, D. C. 20402

FILMS

EARTHQUAKE
Color, 15 min.

Synopsis
The film presents the study of a teenage couple caught in the tragic path of a tsunami (tidal wave). It also explains the nature of earthquakes and the consequences of their awesome power.

Suggested Objectives:
Student objectives might be the following:
1. To learn the causes and effects of earthquakes and tsunamis (tidal waves).
2. To know how to prepare for earthquakes.
3. To learn how to evaluate personal attitudes toward preparedness and the well-being of others.
4. To know what to do and what not to do when an earthquake strikes.

Suggested Prescreening Activities:
Before students view the film, they might do the following:

1. On a world map, plot areas that are most likely to be affected by earthquakes.
2. Discuss safe areas, danger areas and alternatives for safety in the school, home, or other structure.
3. List safety precautions for people in each of the locations discussed.

Suggested Postscreening Activities:
After students view the film, they might do the following:

1. Continue plotting on the map, using a code, those areas where earthquakes have occurred recently. Obtain information from news reports.
2. Make a retrieval chart to record data on earthquakes, and report to the class on property damage, extent of human loss, and reactions of students.
3. Research those areas most affected by earthquakes, and try to contact students (through embassies) and correspond (by audio-tape) with them about the disaster.
4. Study about and locate, if possible, the "ring-of-fire", fault lines, tsunamis, and their causes.
5. Study building codes and ordinances. Investigate ways to change codes for safety. Compare low-risk and high-risk areas, and define the differences.
6. Investigate the scientific relationships between earthquakes and tsunamis.

OUR ACTIVE EARTH
Color, 28 min.

Synopsis
This is a training film that shows safe and unsafe procedures to follow during and after an earthquake. Fire and flood are also examined.

Suggested Objectives:
Student objectives might be the following:
1. To learn causes and effects of earthquakes.
2. To learn the value of planning

for individuals, the family, and the community to meet natural disaster.

3. To know how to prepare for earthquakes.
4. To learn what to do after an earthquake strikes.
5. To know the responsibilities of the local office of emergency services and other agencies of local government in planning, organizing, and implementing programs to meet natural disasters.

Suggested Prescreening Activities:

Before students view the film, they might do the following:

1. List all of the government agencies that assist people during and after a disaster.
2. If it were possible to forecast earthquakes, list things to do to protect life and property.
3. Plot on a map the places where earthquakes occur.

Suggested Postscreening Activities:

After students view the film, they might do the following:

1. List protective measures common to nuclear disaster and earthquakes.
2. Research the adequacy of school plans to meet earthquakes, and make recommendations to the principal.
3. List buildings in the area that would be most structurally safe during an earthquake.
4. Prepare a list of emergency supplies that should be kept in the home.
5. Study about and locate, if possible, the "ring-of-fire", fault lines, tsunamis, and their causes.

EARTHQUAKE I: THE LAND

Color, 20 min.

Explores along the San Andreas fault explaining how quakes occur and illustrating ways the fault makes itself known; by living streams, desert oasis, and varying rock compositions. Xerox films, 245 Long Hill Road, Middletown, Connecticut 06457

EARTHQUAKE II: THE PEOPLE

Color, 20 min.

Survivors of quakes tell how quakes have affected them and their concern for city planning and building code requirements, also shown is emotional rehabilitation to help children adjust after quakes. Xerox films, 245 Long Hill Road Middletown, Connecticut 06457

TSUNAMI

30 min.

This film documents the phenomenon and potential dangers of seismic sea waves (tidal waves). Explains preventive measures taken at the municipal level during a tsunami emergency. NOAA, Department of Commerce Motion Picture Service, 12231 Wilkins Avenue, Rockville, Maryland 20852

LANDSLIDES IN SEATTLE

1975, Color, 17 min.

Cassette slides series. Examines landslide patterns in Seattle, causes and mechanisms of sliding and damage caused by sliding. Many pictures are included of recent landslides which have occurred along Alki Beach, Perkins Lane, Golden Gardens, and other locations. Audio Visual Services, University of Washington, Seattle, Washington 98195

VOLCANOES: EXPLORING THE RESTLESS EARTH

18 min.

On location photography and animated drawings illustrate volcanic phenomena in Hawaii, Mexico, Italy and Iceland. The film distinguishes shield, cinder-cone and strato-volcano by showing how each type of volcano is formed and how each erupts. Lava flows are contrasted in scenes showing ropy panoehoe and rough, blocky lava. Before and after footage of the 1973 destruction of Helgafjell on Iceland's Heimaey Island vividly documents the effects of volcanic eruptions on man and his environment. (1974) Encyclopedia Britannica Educational Corporation, 425 North Michigan Avenue, Chicago, Illinois 60611

A multitude of films are available on earthquakes, volcanoes, and natural disasters in nearly all public libraries as well as colleges and universities.

PART 6

AVALANCHES

OBJECTIVES

At the completion of this section each student will:

- Be familiar with the typical snow and weather conditions which precipitate avalanche activity.
- Be familiar with the various types of avalanches and their respective warning signs.
- Know the common safety rules for route finding in potentially high avalanche prone areas or under prime avalanche conditions.
- Be able to describe and demonstrate the emergency procedures necessary when an individual is caught in an avalanche.

ACTIVITIES

Construct plywood platforms with various sizes of anchor materials glued to the surfaces (i.e., pebbles to represent rocks, dowels to represent logs, etc.). Using several mediums (salt, sugar, flour, diatomacious earth, coffee, etc.) to represent varying types of snow, cover the platforms with a thin layer of several substances and raise one end slowly until it begins to run off. Record the angle, note the difference that the amount and types of anchor makes. In addition, raise the platforms to a critical angle and then disturb the bottom with a finger or sharp instrument. Convex and concave surfaces can also be used. Experiment to demonstrate the various principles of avalanche safety.

REFERENCES:

AVALANCHE SAFETY
E. R. Lachapelle, Outdoor Sports Industries, Denver, Colorado

THE SNOWY TORRENTS, 1910-1966
Dale Gallagher, Editor, U.S. Department of Agriculture Forest Service, Wasatch National Forest, Wyoming, U.S. Government Printing Office

THE SNOWY TORRENTS, 1967-1971
Knox Williams, Rocky Mountain Forest and Range Experiment Station, Forest Service, Fort Collins, Colorado 80521 - U.S. Government Printing Office

SNOW SURVEY SAFETY GUIDE
U.S. Department of Agriculture, U.S. Government Printing Office, Washington, D.C. 20402

MOUNTAIN OPERATIONS
FM 31-72, Department of the Army Field Manual, Headquarters, Department of the Army, Washington, D.C.

MOUNTAINEERING, "THE FREEDOM OF THE HILLS"
Harvey Manning - Editorial Chairman, The Mountaineers, P. O. Box 122, Seattle, Washington

FILMS

SNOW
Color, 13 min., 1969
Snowflakes fall, clothing the landscape in lace as though for a wedding. But as the snowfall grows heavier, the whiteness becomes more and more menacing until, in a sudden ending, the screen erupts in an awesome avalanche, non-narrative. Paramount Oxford, 5451 Marathon Street, Hollywood, California

AVALANCHE
Color, 51 min., 1970
A study of avalanches and their magnificence as well as their potential destructive power. The film contains

scenes of rescue operations for avalanche victims and medical innovations. New methods of avalanche control and the historical views of their terror in the recountings of Napolean are shown through painting and wood cuts. Audio-visual services, University of Washington, Seattle, Washington 98195

AVALANCHE CONTROL

Color, 38 min., 1965

This film shows the work of prediction and control of avalanches conducted at the Alta, Utah control center. It graphically shows the work and accomplishments of the Forest Service snow rangers. USDA Film National Audio-Visual Center, National Archives and Records Service, General Services Administration, Washington, D.C. 20409

PART 7

- FLOODS
- HURRICANES
- LIGHTNING
- TORNADOES

OBJECTIVES

At the completion of these sections, each student will:

. Be aware of the immediate and subtle dangers of floods and flash floods with respect to potential hazards and location.

. Be able to list and explain the most important flood safety rules which pertain to individual safety and survival.

. Be aware of the geographic areas of the country which are potentially high in hurricane hazard.

. Be able to list the preparedness safety rules for hurricane seasons as well as the potential dangers during a storm of this magnitude.

. Know the dangers of electrical storms and the areas most prone to be struck by lightning.

. Be aware of the geographic areas of the country which are highest in tornado potential, as well as frequencies in other parts of the nation.

. Be able to list common sense rules of safety when involved in a tornado or when one is forecast for a general area.

. Be aware of the major causes of death and destruction associated with tornadoes.

. Be able to relate the similarities of high wind storms and tornadoes with respect to precautions and safety procedures.

ACTIVITIES

Organize a field trip to the nearest river in proximity to the school. Determine from the highest water marks what the maximum water flow depth was during recent years flooding. Once this height is established above the existing water level, try to determine areas of highest hazard; (i.e., flood plains, lowlands, rerouting of river beds due to construction, confluence with other rivers or streams, etc.). This also may be discussed with landowners and county flood engineers. Highest levels recorded can also be determined through public records. Collectively, as a class, try to determine the following:

1. 100 and 200 year flood marks.
2. Unsafe construction or buildings adjacent to hazardous areas.
3. Potential of the area for flash flooding.
4. Resources that would be damaged or destroyed with probable escape routes for the residents in the area.
5. Estimate probable damages and property loss adjacent to the river in the advent of a major flood.
6. Brainstorm methods of preparation which might alleviate major causes of property loss and damages.
7. What is the ultimate effect of diking, channeling and other traditional flood preventive measures. (i.e., solving the problem in one area only to push it to another.)
8. How might land use planning be used to prevent or eliminate flood destruction or damage of vital resources in the area.
9. The impact of major flood on the ecosystem.

Determine from local records and files of newspapers, etc., if there has been any record of deaths or injuries from lightning. Discuss the causes of electrical charge build up in an area and try to determine the amount of voltage released in a lightning bolt. Local interviews with residents will usually yield the site of a lightning strike. (i.e., tree, building, tower, etc) Discuss the probability of being struck and preventive precautions.

Determine the highest recorded windstorm in your area. Compare this to the wind velocities found in a tornado. On a map of your state, record the nearest actual tornado to your location. Discuss the likelihood of being involved in high winds or a tornado and the potential dangers of each. With respect to wilderness outings of any kind, what would be the major dangers? The Columbus Day storm of 1962 in the Northwest is a prime example of an extremely dangerous wind storm. What are the major precautions that can be taken in a tornado prone area? Discuss high velocity winds in regard to mobile homes and large campers.

REFERENCES

ATLANTIC HURRICANES
Gordon Dunn, Louisiana State University, Baton Rouge, Louisiana

AD-HOC COMMITTEE ON GEOLOGIC HAZARDS
Washington State Legislature, Senate Committee on Commerce, Olympia, Washington 98504

BIG DAM FOOLISHNESS: THE PROBLEM OF MODERN FLOOD CONTROL AND WATER STORAGE
Elmer Theodore Peterson, Devin-Adaic Company, New York, New York

NATURAL DISASTERS IN THE STATE OF WASHINGTON
Helen Strickland; Washington State Department of Emergency Services, 4220 E. Martin Way, Olympia, Washington 98504

NATURE ON THE RAMPAGE
Ann and Myron Sutton; J.B. Lippincott Company, Philadelphia and New York

1001 QUESTIONS ANSWERED ABOUT NATURAL LAND DISASTERS
Barbara Tufty; Dodd and Mead, New York, New York

DISASTER HANDBOOK
Solomon Garb and Evelyn Eng; Springer Publishing Company, Inc., 200 Park Avenue South, New York City

RESPONDING TO DISASTER
Vanderlyn R. Pine; Bulfin, 1887 N. Water Street, Milwaukee, Wisconsin 53202

WEST COAST DISASTER
Dorothy Franklin; Gann Publishing Company

THE ELEMENTS RAGE
Frank Walter Lane; Chilton Books, Philadelphia

NATURAL HAZARDS
White, Gilbert, Fowler (Edited); Oxford University Press, 1974

FILMS

HURRICANE
DCPA *YOUR CHANCE TO LIVE* SERIES

Synopsis
The film tells the story of a young couple and how their children were killed in a hurricane. It underscores the need for complete awareness and understanding of the power of a hurricane.

Suggested Objectives:
In viewing this film students might have the following objectives:
1. To learn about the causes, effects, and characteristics of hurricanes.
2. To know what precautions should be taken when a hurricane warning is received.
3. To learn about hurricane warning systems.
4. To know the different effects of hurricanes, tornadoes, and thunder and lightning (electrical) storms.

Suggested Prescreening Activities:
Before viewing the film students might do the following:
1. Conduct group discussions about experiences in hurricanes.
2. Use a weather map to discuss weather conditions of the locations where hurricanes are most likely to occur.
3. On the map, plot areas where hurricanes are most likely to occur.
4. Plot hurricanes that are currently being reported in the news media.

Suggested Postscreening Activities
Some suggested postscreening activities for students are the following:
1. Do research on a recent hurricane, and develop a daily news report (newspaper, radio, or TV) of its direction of travel and its effects on communities.
2. Develop plans for emergency preparedness related to hurricanes.
3. Study the characteristics of hurricanes, and develop an exhibit of their creation and behavior. Describe how they terminate.
4. Develop a report or exhibit of the effects of a hurricane; include (think about) aspects such as physical damage, psychological problems, and decisions families and individuals need to make if asked to evacuate.
5. Discuss reasons why hurricanes are given female names; discuss the eye of a hurricane, the time of the year they are most likely to occur, and why, and discuss the speed of their movement.

FLOOD
DCPA *YOUR CHANCE TO LIVE* Series

Synopsis
A teenage canoeist ignores the obvious warnings of a rampaging flood for a few moments of excitement and almost loses his life.

Suggested Objectives
Student objectives might include the following:
1. To learn about the different kinds of floods and their cause-and-effect relationships.
2. To learn basic precautions necessary for safety in flood emergencies.

Suggested Prescreening Activities
Before the students view the film, they might do the following:
1. Predict where and when floods are most likely to occur.
2. Plot on a map the waterways most likely to be affected by flooding. Show the most recent and notable floods reported in the news.
3. List ways in which lives, homes, and personal and public property can be protected from devastating floods.

Suggested Postscreening Activities

After the students have seen the film, they might do the following:

1. Review the list that was made before viewing film; evaluate the listed items in terms of importance for safety precautions; delete or add ideas; and develop a list of safety rules.
2. Conduct research on some of the more notable floods. Compare the causes and effects. Discuss alternative precautions that were taken or could have been taken. Report to the class by means of role playing, news, films, or television formats.
3. Visit local flood control agencies to learn about rules and regulations and how they affect the community.
4. Discuss boating, swimming, and other water recreation safety practices.
5. List personal items you would take if you were evacuated in a small rowboat. Now decide which two items you think most important if you had to choose and why.

TORNADO

DCPA *YOUR CHANCE TO LIVE* Series

Synopsis

The film shows how three young persons nearly lost their lives during a tornado. It vividly shows the tornadoe's devastating power.

Suggested Objectives:

Student objectives in viewing this film might be the following:

1. To learn about the nature and character of tornadoes.
2. To learn how tornadoes are formed and where they are most likely to occur.
3. To learn how to prepare for safety from the effects of tornadoes.

Suggested Prescreening Activities

Before this film is shown to a class students might do the following:

1. Discuss tornadoes and their characteristics, causes, and effects.
2. Plot areas where tornadoes are most likely to occur, and specify communities where destruction has created disaster areas.
3. Discuss the differences between a watch and a warning as presented on radio and TV reports.

Suggested Postscreening Activities

After viewing this film the students might participate in the following activities:

1. Acquire weather maps and learn to read and interpret them, especially as weather patterns relate to conditions for tornado development.
2. Develop a tornado safety list (for homes, offices, schools, factories, etc.). Check it with local emergency services personnel, and use it in school and in your community.
3. Make a retrieval chart from data collected about the characteristics and locations of tornadoes, hurricanes, typhoons, and thunder and lightning storms. Use the chart for comparing and drawing relationships.
4. Research tornado area damage (financial, social, and personal), and develop news reports for radio and TV productions for the class and school.

A LADY CALLED CAMILLE

DCPA film

Synopsis

This film tells the story of Camille which was the most devastating hurricane ever to hit the United States. In August, 1969, Camille's tidal surge and 200-mile-per-hour winds flooded the entire Louisiana Delta and flattened town after town on the Mississippi shore. Two nights later it dropped 27 inches of rain on the Blue Ridge Mountains of Virginia in less than 6 hours, triggering flash floods and landslides that buried whole communities.

Suggested Objectives:

Viewers of the film might have the following objectives:

1. Learn about the cause, characteristics, and effects of hurricanes.
2. Learn about hurricane warning systems and precautions necessary in hurricane areas.
3. To understand how hurricanes, flash floods, and landslides are interrelated.
4. To understand the different effects of hurricanes, tornadoes, and electrical storms.

Suggested Prescreening Activities

Before viewing the film students might do the following:

1. Conduct group discussion about experiences in hurricanes. Use items read or heard about in the media as related to cause and effects of hurricanes.
2. Use a weather map to discuss weather conditions in the areas where hurricanes are most likely to occur.
3. On a map plot areas where hurricanes are most likely to occur, and plot those which are most familiar and have caused considerable damage, based upon news reports.

Suggested Postscreening Activities

Postscreening activities might include the following:

1. Do research on a recent hurricane and develop a daily news report (newspaper, radio, or TV) of its direction of travel and its effects. Predict reactions of people in the different communities.
2. Develop plans for emergency preparedness related to hurricanes.
3. Study the characteristics of hurricanes; develop an exhibit of their creation, behavior, and effects.
4. Develop a report or exhibit of the effects of a hurricane; include (think about) aspects such as physical damage, psychological problems, and decisions families and individuals need to make if asked to evacuate.
5. Discuss reasons why hurricanes always have female names; discuss the eye of a hurricane; the time of year they are most likely to occur, and the speed of their movement.

FLOOD

15 min., R (n.c.)

Describes the manner in which flood predictions are made, portrays the basic precautions against the dangers and hardships imposed by floods; shows the development and impact of floods caused by seasonal snow melt, hurricanes, heavy rainstorms; and concludes with a description of the deadly flash flood. (NOAA)

LIGHTNING & THUNDER

Color, 11 min.

Film discusses the causes and origins of thunder and lightning and how people can protect themselves from lightning. (1967 Coronet Films, Inc.)

PART 8

- INNER CITY SURVIVAL

- COMMERCIAL AND MASS TRANSIT CONSIDERATIONS FOR SURVIVAL

OBJECTIVES

At the completion of these sections each student will:

. Be able to relate the major causes of potential disasters and loss of modern service industry within the inner city environment.

- Be able to discuss the similarities between a survival situation in the city and in the wilderness.

- Be aware of the major problems that could be encountered during emergency situations within the confines of a city, and the improvised solutions needed to overcome these problems.

- Understand the necessity for emergency procedure awareness on all forms of transportation.

ACTIVITIES

Make a comprehensive list of all of the possible emergencies which could cut off modern services industry within the city.

To illustrate the reverse effect of insulation in buildings, procure a Styrofoam cooler for demonstration purposes. Assume that it is a building with adequate insulation. Experiment with heat sources in a cold environment and cold sources in a hot environment. It is relatively easy to show how insulation works in reverse once the heat source is gone from a building. This same phenomenon would be a major problem with the loss of services and electricity.

As a class, collectively trace the source of water from an apartment to its origin. Could it ever become necessary to do this to procure water? Under what circumstances?

Through letters and inquiry, try to establish the time factors involved in various services industry shutdowns before service would be restored.

Discuss the various possibilities for heat sources if there were no electricity during a prolonged period in the winter.

Discuss the various basic principles of shelter construction as they apply to shelter within the inner city. (See section on shelter construction.)

Class members can write to airline and mass transit companies and request materials which pertain to passenger safety and evacuation procedures.

REFERENCES

THE BOOK OF SURVIVAL
Anthony Greenbank, The New American Library, Inc., P. O. Box 2310, Grand Central Station, New York

SURVIVAL IN THE CITY
Anthony Greenbank, Harper & Row Publishing, Inc., 10 East 53rd Street, New York 10022

NATURAL HAZARDS
White, Gilbert, Fowler (Edited), Oxford University Press, 1974

ANATOMY OF SURVIVAL
Eileen Crimmin, Science Digest: November, 1966 (Series of seven articles on natural and man-made disasters.

SURVIVAL AND THE BOMB: METHODS OF CIVIL DEFENSE
Bloomington Indiana University Press 1969

DISASTER HANDBOOK
Solomon Garb and Evelyn Eng, Springer Publishing Company, Inc., 200 Park Avenue

BEHAVIORAL STRESS RESPONSE RELATED TO PASSENGER BRIEFINGS AND EMERGENCY WARNING SYSTEMS (Commercial Airlines)
Marilynn A. Becker, Survival and Flight Equipment (SAFE) Journal, Second Quarter, 1973

FILMS

PUBLIC HEALTH PROGRAMS IN MASS EVACUATION
13 min., B&W, 1957, Title No. 003179
Explains the public health problems attending the mass evacuation of an urban population, including mass feeding,

water supply, medical care, waste and sewage disposal, and disease outbreaks. User should supplement film with current data.

U. S. Government produced audio-visual materials, National Audio-Visual Center, Washington, D. C. 20409

TRANSPORT CRASH SAFETY TESTS

26 min., Color, 1966, Title No. 003765 USFAA

Explains the purpose and procedures used in the Phoenix crash safety tests in 1964. Provides crash and impact load data related to a full-scale crash of a large transport aircraft under conditions normally considered to be survivable.

U. S. Government produced audio-visual materials, National Audio-Visual Center, Washington, D. C. 20409

PART 9

- NUCLEAR EMERGENCIES

OBJECTIVES

At the completion of this section each student will:

- Understand the various types of nuclear radiation and their effects.
- Comprehend the feasibility of survival during a nuclear attack.
- Be able to outline the government's current plan for evacuation and crises relocation.
- Understand and recognize the current national warning systems for probable nuclear disaster.
- Be able to relate generally what type of inter-resource cooperation and coordination would be necessary in planning and executing an effect response to nuclear warfare or disaster.

ACTIVITIES

Contact the local county emergency services director for assistance with this section. Radiological monitoring devices can be demonstrated along with other pertinent materials related to radiation. (Also see Section VI under Shelters for radiation shielding.)

To show the effect of a chain reaction, it is possible to make a demonstration utilizing ping-pong balls and mouse traps. Carefully line the bottom of a medium sized cardboard box with mouse traps which have been set. Now, very carefully, place a ping-pong ball on every trap. When this has been completed, drop an extra ping-pong ball in the box and quickly place a lid over the opening at the top. The reaction should continue until all traps have sprung.

Plan a visit to the local county emergency operations center with guidance from all available emergency response factions.

Determine whether your school is located within an area of high risk during possible nuclear confrontation. Be aware of your school's warning system and discuss probable actions and reactions to an actual nuclear emergency. Peacetime emergencies concerning nuclear radiation should also be discussed, (i.e., terrorist activity and extortion with threats of minor nuclear explosions, nuclear power generation plants, etc.).

Discuss briefly the history of nuclear weapon development in this country as well as worldwide. What countries will soon have nuclear defense as well as threat capability?

REFERENCES

THE EFFECTS OF NUCLEAR WEAPONS
1964, Samuel Glasetone, Editor, Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20242

NUCLEAR SURVIVAL MANUAL
BOSDEC-THE CONCRETE CURTAIN
James R. Fairlamb, Drexel Winslow & Farrington, P.O. Box 55, Butler, New Jersey

NUCLEAR WEAPONS-ACCIDENT HAZAPDS, PRECAUTIONS/EMERGENCY PROCEDURES
Department of Defense-U. S. Energy Research, Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20242

IN TIME OF EMERGENCY
A citizen's handbook, Department of Defense, DCPA, Washington, D. C. 20242

NUCLEAR TERMS: A GLOSSARY ERDA
Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20242

TRIUMPH
Philip Wylie, Rinehart Publishing Company, New York, New York

TOMORROW
Philip Wylie, Rinehart Publishing Company, New York, New York

FILMS

The following films are produced by the U.S. Government Agency and distributed for loan by local and state emergency services offices:

KNOWLEDGE IS PROTECTION
Color, 9 min.

Synopsis
This film traces methods of warfare up to the present. It points out questions concerning survival living in a nuclear age.

Suggested Objectives:
Students viewing the film might have the following objectives:

1. To understand the need for safeguards against radiation.
2. To learn that the possibility of a nuclear conflict does exist.

Suggested Prescreening Activities:
Before students view the film, they might do the following:
1. Discuss misconceptions about the nuclear age.
2. Identify on a world map those nations that are known to have nuclear arms or nuclear devices.
3. Discuss what is known concerning means of protecting people against nuclear disaster.

Suggested Postscreening Activities:
After students view the film, they might do the following:
1. List ideas about radiation and nuclear weapons.
2. Develop a list of agencies that work with the local office of emergency services.
3. Discuss need for a family disaster plan for each home.
4. Develop a chart to show comparisons of power output with fossil fuel, hydroelectric, and nuclear power-generating systems.

ABOUT FALLOUT
Color, 24 min.

Synopsis
The film uses both animation and live action to demonstrate the background radiation we live with constantly, the dangers of radioactive fallout from nuclear attack, and the "valuable allies" that could help people survive radioactive fallout (distance, mass, time, and preparedness).

Suggested Objectives:
Student objectives in viewing the film might include the following:

1. To develop an understanding of how time, distance, and shielding are used to minimize the

effects of fallout radiation.
2. To dispel the common myths and fallacies now surrounding nuclear radiation.
3. To learn the effects of nuclear radiation fallout on the cells of the body.
4. To know what steps can be taken to protect food and water against nuclear radiation fallout.

Suggested Prescreening Activities:
Before viewing the film students might do the following:
1. List the different ways people are exposed to gamma radiation.
2. Learn how gamma radiation is measured.
3. Explain how human cells are reproduced.
4. Discuss how radiation is used in industry, science, and medicine.

Suggested Postscreening Activities:
After viewing the film the students might do the following:
1. Develop plans for a shelter in the home.
2. List the three ways nuclear radiation is similar to radiation of heat and light.
3. Discuss the survival theory of protection from nuclear radiation.

OCCUPYING A PUBLIC SHELTER
Color, 24 min.

Synopsis:
This film shows what living in a public shelter could be like and what problems would be involved.

Suggested Objectives:
Student objectives might include the following:
1. To learn how home shelters are an integral part of the national shelter program.
2. To understand the types of community shelter space approved for federal marking.
3. To gain knowledge about some aspects of shelter living.
4. To learn that special foods or medicines will not be provided in the community shelters.

Suggested Prescreening Activities:
Before students view the film, they might do the following:
1. List the community fallout shelters in your area.
2. Discuss the types of food and other materials that should be used in shelters.
3. Compare the types of food and materials that would be in a fallout shelter with those needed after a natural disaster.

Suggested Postscreening Activities:
After students view the film, they might do the following:
1. Discuss the psychological reactions people might have when they are required to live in a confined area.
2. List the types of duties that will have to be performed in a shelter.
3. Discuss how to improvise a shelter if no public shelter is in the area.
4. List the different types of physiological survival factors that may have mental and emotional effects on people.
5. Plan routes from the family home to the nearest shelter.
6. Learn where each family member's shelter will be during the working day.

IN TIME OF EMERGENCY
Color, 25 min.

Synopsis:
The film informs the people of the possibility of a nuclear attack and the need to understand the effects of a nuclear explosion; also, it shows that people can plan for survival.

Suggested Objectives:
In viewing the film students might have the following objectives:
1. To understand the three main ways of protecting oneself from nuclear radiation.

2. To understand the need for family planning for both nuclear and natural disasters.
3. To develop skills to improvise shelter during a nuclear disaster.

Suggested Prescreening Activities

Prescreening activities might include the following:

1. List areas in the community that could be used as shelters during a nuclear disaster.
2. List supplies that would be needed during and after a nuclear disaster.
3. Plot on a map the areas most likely to experience nuclear disasters.

Suggested Postscreening Activities:

Postscreening activities might include the following:

1. Visit a local office of emergency services to see what planning has been done for the community.
2. Discuss what is meant by long-term whole-body exposure.
3. Investigate your community's warning system.
4. List the special items a family should take to a community shelter.
5. Discuss what one can do during and after the blast period of a nuclear explosion.

NUCLEAR DISASTER

Color, 15 min., "Your Chance To Live" series.

Synopsis:

A documentary film crew is shown making a film on nuclear disaster. The film's surprise ending leaves the audience with a very real sense of awareness and comprehension of the possibility of a nuclear attack.

Suggested Objectives:

Student objectives might be the following:

1. To learn about the warnings and preparations necessary in case of nuclear attack.
2. To gain knowledge of the nature of nuclear explosions.
3. To learn how to seek assistance and be helpful in emergencies related to nuclear energy.

Suggested Prescreening Activities:

Before students view the film, they might do the following:

1. Identify on a map those countries that have nuclear arms.
2. Plot those areas in the United States where electric power-generating facilities are using nuclear energy.
3. Discuss the effects of the nuclear bombs on communities and the ways people can protect themselves against disaster.

Suggested Postscreening Activities:

After students view the film, they might do the following:

1. Visit, if possible, a nuclear power plant to learn means of generating power; safety precautions used in the surrounding area for animals, plants, and humans; methods of storing nuclear energy; and means of handling waste.
2. Develop a data chart to show comparisons of power output with hydroelectric, fossil fuel, and nuclear power-generating systems.
3. Develop a model of a nuclear fallout shelter, and prepare a list of emergency supplies.
4. Observe school drills, and provide assistance to students and staff for improving the emergency drill and preparation.
5. Develop a map of the community, and plot fallout shelters, emergency escape routes, and emergency service agencies. Use the map to report to students, PTA, etc.

SECTION VI

GENERAL EMERGENCY TECHNIQUES

PART I

- SURVIVAL FIRST AID AND HYGIENE

OBJECTIVES

At the completion of this section each student will:

- Be able to explain the difference between "standard" first aid and "survival" first aid.
- Be familiar with emergency techniques and improvised first aid associated with the following injuries:
  - Severe bleeding
  - Pain and shock
  - Broken bones
  - Burns
  - Insect bites and stings
- Know the consequences of improper hygiene under emergency or survival conditions.

ACTIVITIES

Set up a series of exercises to simulate various types of medical emergencies. Limit the resources and availability of competent medical aid. Provide for experiences that deal with individuals alone, as well as groups of two to eight. Well thought out and planned exercises of this type can be very educational and meaningful over a period of time.

Contact local emergency service agencies and volunteer students for simulated victims in disaster and emergency exercises.

Notify local emergency medical service personnel for possible presentations to a class. Request that they trouble shoot situations where they may not have all of their sophisticated equipment. Stress self aid.

Try to solicite student experiences which show how people have made do with what was available for medical aid in an emergency.

REFERENCES

A SIMPLE GUIDE TO TRAUMA
R. L. Huckstep, Lovingstone, Edinburgh

EMERGENCY CARE & TRANSPORTATION OF THE SICK & INJURED
George Banta Company, Inc., Menasha, Wisconsin

FIRST AID & EMERGENCY RESCUE
Lawrence W. Erven, Glencoe Press, 8701 Wilshire Blvd., Beverly Hills, California

FIRST AID FOR PSYCHOLOGICAL REACTIONS IN DISASTERS
American Psychiatric Association, 1700-18th Street N. W., Washington, D.C. 10009

INDUSTRIAL FIRST AID
Department of Labor & Industry, Division of Safety Education, Olympia, Washington 98504

MEDICAL AID IN THE WILDERNESS
Dennis Bleything, Life Support Technology, Inc., Beaverton, Oregon 97005

THE OUTDOORSMAN'S MEDICAL GUIDE
Allan Nourse, Harper & Row, N. Y., New York

STANDARD FIRST AID & PERSONAL SAFETY
American National Red Cross, Doubleday and Company, Inc., Garden City, New York

ADVANCED FIRST AID & EMERGENCY CARE
American National Red Cross, Doubleday and Company, Inc., Garden City, New York

CARDIOPULMONARY RESUSCITATION
American National Red Cross, Doubleday and Company, Inc., Garden City, New York

WHAT TO DO ABOUT BITES & STINGS
Robert Arnold, 1973. Good black and white photographs and drawings.

WOUND HEALING
Russell Ross, (Scientific American-Offprint), W.H. Freeman and Company, 660 Market Street, San Francisco, California 94104

MOUNTAINEERING MEDICINE
Fred T. Darvill, Jr., M. D., Skagit Mountain Rescue Unit, P. O. Box 2, Mt. Vernon, Washington 98273

MOUNTAINEERING FIRST AID
Dick Mitchell, The Mountaineers, P. O. Box 122, Seattle, Washington

MOUNTAINEERING MEDICINE & PHYSIOLOGY
Clarke, Ward, Williams, ALPINE, 74 South Audley Street, London, W.1.

OUTDOORSMAN'S FITNESS & MEDICAL GUIDE
Lawrence Galton, Outdoor Life, Harper & Row, New York, New York

FILMS

THE LIFE YOU SAVE (First Aid)
Color, 17 min., Alan Burks

Four true cases, where knowledge of basic first aid saved lives, are reenacted by the four teenagers who knew what to do: a boy applies direct pressure to the wound and stops the potentially fatal bleeding of a child in a bicycle accident; a girl, whose father severs an artery, saves his life by knowing the four main pressure points of the body where arterial bleeding can be stopped; a boy saves a child he discovers unconscious in an abandoned refrigerator by applying mouth-to-mouth resuscitation; another boy saves his small sister who has ingested poison by first having her drink water to dilute it and then properly makes a phone call for emergency medical help. In addition, basic treatment for shock is demonstrated. Narrator-host for the film is Tim Donnelly of the "Emergency" TV series, who describes in each case the first aid method step-by-step as it is dramatized.

FilmFair Communications, 10900 Ventura Boulevard, Studio City, California 91604

Red Cross and Industrial First Aid films available through local and regional libraries.

Instructors: Be sure proper consideration is given to any situation which is depicted in a film for survival and extended emergency situations.

PART 2

- IMPROVISATION

OBJECTIVES

At the completion of this section each student will:

. Be able to list the basic rules for improvising using the technique of brainstorming.

. Be able to look at immediate resources with many different uses in mind, (i.e., maps, magazines, newspapers being used as insulation, shade, splints, fire starter, padding, clothing, etc.)

ACTIVITIES

Brainstorm with the class some of the possible things that might be made from a paper clip or similar object. Now think of a hypothetical situation where some type of tool or particular object is needed during an emergency. What are some of the possible alternatives that might be used.

Brainstorm all of the similarities between an automobile and the human body. (This exercise sharpens the technique of brainstorming.)

Place a number of objects (i.e., popsicle stick, rubber band, paper clip, pencil, staples, wire, erasers, etc.) in individual envelopes. Make assignments to improvise a measuring device, a protractor, a sighting tool for estimating height, a time clock for use in the sun, and anything else that might be appropriate.

Make a display board showing the basic principles of improvising and then pick a resource material such as a newspaper to show a variety of things that can be improvised from newspaper alone.

For outdoor classes, it is interesting and most beneficial to plan an outing involving cooking, sleeping out or living in the outdoors. Make a list of acceptable equipment to take, but remove items at different times. The students must then improvise the items that were removed.

REFERENCES

SURVIVING THE UNEXPECTED WILDERNESS EMERGENCY
Gene Fear, Survival Education Association, 9035 Golden Given Road, Tacoma, Washington 98445

TEACHING AIDS, TECHNIQUES & RESOURCES FOR SURVIVAL EDUCATION
Rick LaValla, Survival Education Association, 9035 Golden Given Road, Tacoma, Washington 98445

Presently, there are no films which directly support the concepts presented in this section.

PART 3

- CLOTHING

OBJECTIVES

At the completion of this section student will:

. Understand the basic function of clothing and how it protects the body.

. Be able to define insulation and the criteria for determining its effectiveness.

. Be able to list the major clothing materials and the pros and cons of each kind.

. Know the basic principles of keeping the body temperature regulated properly with clothing.

ACTIVITIES

Use the water can demonstration of body heat loss. Procure six one-gallon cans (old paint thinner or gasoline cans); dress two in wool, two in cotton; leave one plain and dress the last in both cotton and wool with a plastic cover and ground insulation. These will simulate six individuals dressed differently in the same environment. Fill

all of the cans with approximately 100 degree water and place them outside in a shady, windy spot. Wet down one of the wool coverings and one of the cotton coverings. Periodically check the temperature of each can with a photographic developing thermometer to determine which can drops fastest in temperature. Radiation, convection and conduction will remove heat very rapidly, to simulate the same effect on the human body under similar conditions.

The same type of experiment can be run under heat lamps or in the hot sun. This will serve to show that retention of clothing in the heat is beneficial and should be advocated.

Cut one sleeve out of both an old cotton long-sleeve shirt and a wool sweater. Immerse one end of the sleeves in water and suspend the other ends up in the air with string. (Manikins can be made from plastic or aluminum to support the sleeves so they will stand alone.) Monitor the rate at which water is absorbed into both pieces of material. This example of wicking action can be both harmful and helpful. Brainstorm the possible implications and perform the experiment with additional types of clothing such as synthetics.

Obtain two gloves, one cotton and one wool. Immerse both in water and hold in front of a fan. Note the difference in insulation qualities and which material would be the most comfortable if worn wet. Let each student experience the difference in qualities of the two materials. Now, if possible, note the relative heat loss rate of each of the two. (This can be accomplished with a very small water container filled with 100 degree water, regularly monitored as in the can experiment.

Construct an illustration or display board with all the major types of materials, and the representative clothing for which they are used in the clothing industry. Also include various types of insulation materials such as fiberfill, down, polar guard, etc.

Give an assignment to make one article of improvised clothing from other than regular clothing material.

REFERENCES

BASIC COLD WEATHER MANUAL FM 31-70
Department of the Army Field Manual, Headquarters, Department of the Army Washington, D.C.

COLD FACTS FOR KEEPING WARM
Department of Army, No. 21-52, U.S. Government Printing Office, Washington, D.C. 20402

HOW TO KEEP WARM
Gerry Cunningham, Colorado Outdoor Sports Corporation, Denver, Colorado

MOUNTAINEERING "THE FREEDOM OF THE HILLS"
Harvey Manning-Editorial Chairman, The Mountaineers, P. O. Box 122, Seattle, Washington

OUTDOOR LIVING
Eugene H. Fear, Editor, Tacoma Unit, Mt. Rescue Council, P. O. Box 696, Tacoma, Washington 98401

THE WILDERNESS HANDBOOK
Paul Petzoldt, W. W. Norton & Company, Inc., New York, New York

THE NEW COMPLETE WALKER
Colin Fletcher, Random House, New York, New York

TRANSPARENCIES FOR TEACHING--SURVIVAL/ DISASTER EDUCATION PROGRAMS
200 or more transparencies which cover the entire spectrum of emergencies from wilderness emergencies to natural and man-made disasters. Survival Education Association, 9035 Golden Given Road, Tacoma, Washington 98445

FILMS

At the present time, there are no films which directly support this section.

PART 4

- SHELTERS

OBJECTIVES

At the completion of this section each student will:

. Be able to define the term shelter as it applies to all emergency or survival related situations.

. Be able to list the criteria for a good shelter.

. Be able to describe proper insulation as it applies to shelters in all types of environmental conditions.

. Be able to explain the relationship of thermal conductivity and proper shelter construction.

. Know the dangers of radiation and the relative amounts of shielding which are necessary to protect the body.

. Know the rate of radiation hazard decay and its effects on life forms.

ACTIVITIES:

Brainstorm with the class, the types of emergency action shelters for various types of emergencies:

Wilderness - winter
- desert

Natural Disaster - building collapse

Man-Made Disaster - stalled transportation

Have the class bring in examples of natural and man-made insulating material.

Discuss the principles of thermal conductivity.

Take the class into the natural environment. Each student will select a site and list on paper what he will do to improve his situation (do not disturb the natural environment). List material used and things found in immediate area. Draw diagram of shelter and layout of site. Where is the closest water? What are the potential hazards? What is the availability of firecraft material?

As a class project, develop a scale model of a wilderness site common to the region. Also use toothpicks, popsicle sticks, twigs, or similar materials for construction of scale model shelters.

Brainstorm things from which the human body needs to be protected and list the respective materials or shelters needed.

REFERENCES

ALL ABOUT CAMPING
W. K. Merrill, Stackpole Books, Cameron & Kelker Streets, Harrisburg, Pennsylvania 17105

AT HOME IN THE WILDERNESS
Sun Bear, Naturegraph Publishers, 8339 W. Dry Creek Road, Healdsburg, California 95448

CAMPING AND WOODCRAFT
Horace Kephart, Macmillan, New York, New York

OUTDOORSMAN'S HANDBOOK
Clyde Ormond, Dutton, New York, New York

NRA HUNTER SAFETY & CONSERVATION PROGRAM-Chapter S-2
National Rifle Association, 1600 Rhode Island Avenue N.W., Washington D.C. 20036

NATURAL HAZARDS
White, Gilbert, Fowler (Edited), Oxford University Press, 1974

ON YOUR OWN IN THE WILDERNESS
Townsend Whelen & Bradford Angier, Stackpole, Harrisburg, Pennsylvania

SURVIVAL - U.S. ARMY FIELD MANUAL FM 21-76
Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

SURVIVAL TRAINING ADDITION AF MANUAL 64-3
Department of the Air Force, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

SURVIVAL-SEARCH & RESCUE AF MANUAL 64-5
Department of the Air Force, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

SURVIVING THE UNEXPECTED WILDERNESS EMERGENCY
Gene Fear, Survival Education Association, 9035 Golden Given Road, Tacoma, Washington 98445

COMPLETE BOOK OF OUTDOOR LORE
Clyde Ormond, Outdoor Life-Harper & Row, New York, New York

EMERGENCY PREPAREDNESS KITS AND INFORMATION FOR YOUR: HOME, AUTO, BOAT, AIRPLANE, AND WILDERNESS OUTING
(Educational brochures), Gene Fear, Gerry Sabel, Skip Stoffel, and Leslie Gritman, Washington State Department of Emergency Services, 4220 East Martin Way, Olympia, Washington 98504

GOLDEN BOOK OF CAMPING
Robert E. Smallman, Golden Press, New York, New York

THE SURVIVAL BOOK
Paul H. Nesbitt, Alonzo W. Pond, William H. Allen, Funk and Wagnalls, New York, New York

SNOW CAMPING & MOUNTAINEERING
Edward A. Rossit, Funk and Wagnalls, New York, New York

HOW TO STAY ALIVE IN THE WOODS
Bradford Angier, Collier Books, The Macmillan Company, 866 Third Avenue, New York, New York 10022

THE EFFECTS OF NUCLEAR WEAPONS
1964 edition, Samuel Glasetone, Editor, Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20242

FILMS

SURVIVAL TRAINING-SHELTER
USAF Training Film #FTA 279W. Local Air Force Base or Air Force Recruiter.

SURVIVAL UNDER RADIATION-SHELTER AND TRAVEL
USAF Training Film #FTA 376A. Local Air Force Base or Air Force Recruiter.

SAFE IN NATURE
Color, 20 min., a John Ralmon film, 1974 release.

Dramatizing two examples of young people getting lost in the woods and in the desert. The film first shows the things the victims did wrong while lost to lengthen survival and help searchers and then shows what they should have done to lengthen survival and help searchers find them. Emphasized are three basics: stay put, make shelter, and give distress signals with detailed coverage of each. In addition, information is given on conserving energy and body moisture, techniques of finding water, safe versus poisonous plants, the body's actual food and water needs under survival conditions, building proper fires, etc., plus the important practice of leaving a note telling where you plan to go. The film also touches on nature lore and first aid basics and encourages

PART 5

- FIRECRAFT

OBJECTIVES

At the completion of this section each student will:

- Be able to list the basic requirements for a fire along with the most common mistake made when building one.
- Be able to list the various degrees at which combustible materials will ignite with representative samples of each.
- Be able to start a fire with several alternative methods other than matches (i.e., metal match, flint and steel, batteries, magnifying glass, etc.).
- Know the importance of fire in any outdoor emergency situation.
- Be aware of hazardous or detrimental locations where fires should not be placed.
- Be able to list at least five different types of fires and their uses.

ACTIVITIES

Discuss the basic fire triangle and how each method of fire starting complements the efficiency of each requirement.

Using small squares of double- or triple-layer aluminum, have each student practice lighting individual cotton balls with a variety of spark and heat-producing devices (excluding matches). After they have become proficient at this, try other types of tinder. Move to the outdoor environment and have each student build a very small fire using materials no larger than a broomstick handle (a small bundle or box of materials can easily be procured from any wooded lot, lumber yard or brushy area).

Compare the combustibility of green and wet wood shavings or splinters to those that are dead and dry. Try starting each in a small fire.

Compare the kindling temperatures of various tinders in an experimental lab situation. (A high reading thermometer and a non-flame heat source such as a hotplate can be used.)

Demonstrate the use of the candle as an extension of the match to dry out damp or wet fire material.

Obtain a fine mist sprinkler and set it so that it points straight up in the air. Have a contest to see who can build a fire underneath the sprinkler. Dress the students in rain gear and set up different conditions.

REFERENCES

GOLDEN BOOK OF CAMPING
Robert E. Smallman, Golden Press, New York, New York

NELSON'S ENCYCLOPEDIA OF CAMPING
E. C. Janes, Thomas Nelson & Sons, New York, New York

NRA HUNTER SAFETY & CONSERVATION PROGRAM-Chapter S-2
National Rifle Association, 1600 Rhode Island Avenue N.W., Washington, D.C.

OUTDOORSMAN'S HANDBOOK
Clyde Ormond, Dutton, New York, New York

viewers to learn more so they can safely and more fully enjoy wilderness areas.

FilmFair Communications, 10900 Ventura Boulevard, Studio City, California 91604

MOUNTAIN AND DESERT SURVIVAL-DESERT SURVIVAL

Color, 31 min., 16mm, 1963, producer USAF, National Audio-Visual Center, Washington, D.C. 20409, title #535008

Outlines principles of desert survival. Shows procedures for promoting rescue and maintaining personal health and comfort. Points out sources of food and water, explains shelter construction and discusses use of signal fires and the use of a mirror. Emphasizes the importance of calmness and clear thinking. Demonstrates the tragedy that can result from fear and panic.

SHELTER CONSTRUCTION IN WINTER

Color, 13 min., 16mm Film Optical Sound, Sterling Educational Films, 241 East 34th Street, New York, New York 10016, 1967.

Explains that comfortable shelters can be constructed easily, even during winter's cold conditions. Shows some of the methods used to build comfortable shelters. LC No. FIA68-1288

SHELTER ON A QUIET STREET

Color, 25 min., 16mm Film Optical Sound, U. S. Office of Civil Defense, 4820 Howard, Washington, D.C. 20016

Shows how individual family fallout shelters fit into a national plan. Tells how and why one family decided to build a shelter.

Suggested Postscreening Activities

After students view the film they might do the following:

1. Discuss the psychological reactions people might have when they are required to live in a confined area.
2. List the types of duties that will have to be performed in a shelter.
3. Discuss how to improvise a shelter if no public shelter is in the area.
4. List the different types of physiological survival factors that may have mental and emotional effects on people.
5. Plan routes from the family home to the nearest shelter.
6. Learn where each family member's shelter will be during the working day.

OCCUPYING A PUBLIC SHELTER

Defense Civil Preparedness Agency (DCPA) film available through local or state emergency services offices.

Synopsis

This film shows what living in a public shelter could be like and what problems would be involved.

Suggested Objectives

Student objectives might include the following:

1. To learn how home shelters are an integral part of the national shelter program.
2. To understand the types of community shelter space approved for federal marking.
3. To gain knowledge about some aspects of shelter living.
4. To learn that special foods or medicines will not be provided in the community shelters.

Suggested Prescreening Activities

Before students view the film they might do the following:

1. List the community fallout shelters in your area.
2. Discuss the types of food and other materials that should be used in shelters.
3. Compare the types of food and materials that would be in a fallout shelter with those needed after a natural disaster.

ROUGHING IT EASY
Dian Thomas, Brigham Young University, Provo, Utah

SURVIVAL
U.S. Army Field Manual FM 21-76
Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

SURVIVAL-SEARCH & RESCUE AF MANUAL 64-5
Department of the Air Force, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.

SURVIVAL TRAINING ADDITION AF MANUAL 64-3, Department of the Air Force, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

SURVIVING THE UNEXPECTED WILDERNESS EMERGENCY
Gene Fear, Survival Education Association, 9035 Golden Given Road, Tacoma, Washington 98445

OUTDOOR SURVIVAL SKILLS
Larry Dean Olsen, Brigham Young University Press, Provo, Utah

SYLLABUS FOR OUTDOOR SURVIVAL SKILLS
Compiled by David Westcott, Brigham Young University, Provo, Utah

THE SURVIVAL BOOK
Paul H. Nesbitt, Alonzo W. Pond, William H. Allen, Funk and Wagnalls, New York, New York

OUTDOOR LIVING
Eugene H. Fear, Editor, Tacoma Unit, Mt. Rescue Council, P. O. Box 696, Tacoma, Washington 98401

EMERGENCY PREPAREDNESS KITS AND INFORMATION FOR YOUR: HOME, AUTO, BOAT, AIRPLANE, & WILDERNESS OUTING
(Educational Brochures), Gene Fear, Gerry Sabel, Skip Stoffel, and Leslie Gritman, Washington State Department of Emergency Services, 4220 East Martin Way, Olympia, Washington 98504

FIRECRAFT
Edited by Leslie Gritman, Department of Emergency Services, 4220 East Martin Way, Olympia, Washington 98504

TEACHING BASIC SKILLS IN SURVIVAL EDUCATION (Lesson Plans)
Skip Stoffel, Survival Education Association, 9035 Golden Given Road, Tacoma, Washington 98445

TRANSPARENCIES FOR TEACHING--SURVIVAL/DISASTER EDUCATION PROGRAMS
200 or more transparencies which cover the entire spectrum of emergencies from wilderness emergencies to natural and man-made disasters, Survival Education Association, 9035 Golden Given Road, Tacoma, Washington 98445

THE OUTDOORSMAN'S EMERGENCY MANUAL
Anthony J. Acerrano, Winchester Press, 205 East 42nd Street, New York, New York 10017

FILMS

FIRE BUILDING
USAF Training Film #FTA 2791
B&W, 9 min., 1957
Gives information to aid in making survival fires and tells of the different types of fire building equipment which can be improvised.

FIRES FOR SURVIVAL
USAF Training Film #FTA 279R
B&W, 7 min., 1958
Demonstrates usefulness and types of fires in survival.

FIRE SCIENCE
Color, 15 min.
Introduction to the chemistry of combustion. Explains fuel, oxidation, kindling temperature and spontaneous combustion. Visualizes molecular action when burning fuel releases energy.
Churchill Films, 662 N. Robertson Boulevard, Los Angeles, California 90069

THE FIRE TRIANGLE

14 min.

Fuel, heat, and air are the three elements that make up the "Fire Triangle". Before a fire can start, these three elements must be present. To control a fire, one (or more) of these elements must be removed.

BFA Educational Media, 2211 Michigan Avenue, Santa Monica, California 90404

FIRE: WHAT MAKES IT BURN

Color, 11 min.

Uses laboratory demonstrations to show what is needed to make a fire, what a flame is, how combustion takes place, and how a fire can be extinguished. Collaborator: Illa Podendorf, Ph.D., The University of Chicago.

Encyclopedia Britannica Educational Corporation, 425 N. Michigan Avenue, Chicago, Illinois 60611

TO BUILD A FIRE

Color, 15 min.

A film about one of Jack London's best known stories. Shows firecraft and survival in the cold.

BFA Educational Media, 2211 Michigan Avenue, Santa Monica, California 90404

PART 6

- WATER PROCUREMENT AND TREATMENT

OBJECTIVES

At the completion of this section each student will:

- Understand the body's requirement for water under various temperatures and conditions.
- Be able to list a minimum of six sources for water in the home in the event that power and water were shut off.
- Be able to relate the key factors in water location for each of the major geographic terrains (i.e., desert, mountains, sea coast, arctic or winter).
- Be able to list the various ways of purifying and clarifying water.

ACTIVITIES

As a science project compute the relative water content of various types of foods consumed on a daily basis. Have each student record what he can eat during one day's period of time. Compute from tables available in health and nutrition books exactly the amount of water consumed in one day. Compare this amount with that which is necessary to survive.

Obtain a supply of water which is dirty, brackish, silty, or otherwise undrinkable. Water from a mudpuddle is a good source. Have the students make the water palatable as well as pure. Brainstorm a number of ways to clarify water by improvised means.

Use a small number of clear plastic bags to demonstrate the effectiveness of a vegetation still. Stuff them full of green vegetation and place in the sun or under a sun lamp. Measure the amount of water content per unit of vegetation. How much vegetation would be necessary to procure one individual's water for a day? Compare this with the amount of water loss which would occur to the individual while gathering material to make the still.

Construct a solar still in a dirt-filled box. After making sure the soil is fairly damp, try to determine if there is an optimum production rate under ideal conditions. Is this method of water procurement actually effective for more than just a water supplement?

In a winter environment, dig a small hole just as in the construction of a solar still. Line the hole with black plastic so that it is not touching the snow in the bottom and sides. If the sun is shining brightly, sprinkle a small amount of snow on top of the plastic in the bottom of the hole. If it is a small amount, it should melt from the heat of the black plastic. Could this be used as a water source? Explore other possibilities to improve this method. Discuss the disadvantages of eating snow and ice directly.

REFERENCES

WATER
Edited by Leslie Gritman, Department of Emergency Services, 4220 East Martin Way, Olympia, Washington 98504

EXPLORING ENERGY
Educational brochure. Edited by Leslie Gritman, Washington State Department of Emergency Services, 4220 East Martin Way, Olympia, Washington 98504

EXPLORING ENERGY
Educational brochure. Dr. B. R. Spitz, San Diego Mt. Rescue Team, LaJolla, California, 1974

WATER METABOLISM
Hall Annual Review of Physiology, F. F. Adolph, Sanford University, Annual Reviews, Inc.

DESERT SURVIVAL
KTAR-TV News, P.O. Box 711, Phoenix, Arizona 85001

DESERT SURVIVAL
Maricopa County Department of Civil Defense and Emergency Services, Arizona Game and Fish Department, Information and Education Division, 2222 West Greenway Road, Phoenix, Arizona 85023

HEAT STRESS AND HEAT DISORDERS
1964, Leithead & Lind, Comprehensive Review

PHYSIOLOGY OF MAN IN THE DESERT
E. F. Adolph & Associates, Hafner Publishing Company, 31 East 10th Street, New York, New York 10003

DESERT ANIMALS PHYSIOLOGICAL PROBLEMS OF HEAT & WATER
Oxford University Press, New York, New York

TRANSPARENCIES FOR TEACHING--SURVIVAL/DISASTER EDUCATION PROGRAMS
200 or more transparencies which cover the entire spectrum of emergencies from wilderness to natural and man-made disasters, Survival Education Association, 9035 Golden Given Road, Tacoma, Washington 98445

TEACHING BASIC SKILLS IN SURVIVAL EDUCATION
(Lesson Plans), Skip Stoffel, Survival Education Association, 9035 Golden Given Road, Tacoma, Washington 98445

SURVIVING THE UNEXPECTED WILDERNESS EMERGENCY
Gene Fear, Survival Education Association, 9035 Golden Given Road, Tacoma, Washington 98445

THE SURVIVAL BOOK
Paul H. Nesbitt, Alonzo W. Pond, William H. Allen, Funk and Wagnalls, New York, New York

SURVIVAL TRAINING ADDITION AF MANUAL 64-3
Department of the Air Force, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

SURVIVAL--SEARCH & RESCUE AF MANUAL 64-5
Department of the Air Force, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

SURVIVAL--U.S. ARMY FIELD MANUAL FM 21-76
Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

FILMS

WATER SURVIVAL EQUIPMENT

U.S. Air Force Training Film #TF5588
Color, 17 min., 1964

Shows correct use and proper care of the solar still and the desalter kit. Demonstrates still assembly, proper floating, filling, draining, and fresh water removal as well as resalting kit procedures.

WATER PURIFICATION, INTRODUCTION

Color, 10 min., 16mm, title #794010.

Emphasizes the importance of disinfecting water. Explains the various sources of water and the steps required to provide a safe water supply, and mentions briefly diatomite filters and distilling equipment.

Producer USN (National Archives and Records Service, General Services Administration, Washington, D.C. 20490).

SURVIVAL STRESSES

U.S. Air Force training film
Color, 30 min., 1961

Discusses major physiological stresses that may be encountered by persons facing a survival situation in the arctic, desert, the tropics, and in the water.

Available from Norwood Films, P.O. Box 1894, Wheaton Post Office, Silver Spring, Missouri 20902

PART 7

- FOOD PROCUREMENT AND PREPARATION

OBJECTIVES

At the completion of this section each student will:

- Understand the relative importance of food in relation to the other major priorities during emergency and survival situations.
- Be familiar with the major representative types of plants and animals which are available for food in the outdoor environment.
- Be familiar with the easiest and most effective methods for preparing both plant and animal food.
- Be able to relate the basic principles of food storage both in the home and away from civilization.

ACTIVITIES

A good many tables are available in health and nutrition books which give caloric values of various types of food, both wild and domestic types. From these tables, it is easy to compute daily intake of calories for every student who keeps a record of what he or she eats. Also available are calorie consumption tables based upon exercise and activity. An interesting experiment can be run using figures from the tables mentioned above: Using any readily available outdoor area which has edible plants of any kind, send the students on a foraging trip to gather edibles. Each student must keep track of calories expended based on activity charts for caloric consumption. Now, based on food gathered, was there a net gain? Speculate on other areas and conditions. When is it advisable to forage for food in a survival situation?

Discuss the origins of our domestic foods that are now on the market.

The majority of people in our society have never gone one complete day without food. Ask for volunteers to do this and record in writing exactly how they feel. What effect does mental and physical activity or inactivity have on the feelings of hunger.

Schedule a cookout to prepare some basic foods (carrots, potatoes, meat),

without the benefit of any man-made utensils or tools (primitive style). Discuss beforehand some of the various means of cooking and decide which ones are the least wasteful.

Gather several readily available species of plants such as cattails, grass seed, fiddlehead ferns, nettles, etc., and experiment on preparing them. Usually resources personnel are available locally who would be more than happy to lend their assistance (i. e., botany professors, wild plant enthusiasts, nature clubs, etc.)

REFERENCES

THE SURVIVAL BOOK
Paul H. Nesbitt, Alonzo W. Pond, William H. Allen, Funk and Wagnalls, New York, New York

SURVIVAL--U.S. ARMY FIELD MANUAL FM 21-76
Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20402

SURVIVAL-SEARCH & RESCUE AF MANUAL 64-5
Department of the Air Force, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

SURVIVAL TRAINING ADDITION AF MANUAL 64-3
Department of the Air Force, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

ROUGHING IT EASY
Dian Thomas, Brigham Young University, Provo, Utah

HOW TO STAY ALIVE IN THE WOODS
Bradford Angier, Collier Books, The Macmillan Company, 866 Third Avenue, New York, New York 10022

COMMON EDIBLE & USEFUL PLANTS OF THE WEST
Muriel Sweet, Naturegraph Company, Healdsburg, Califonria 95448

EDIBLE? INCREDIBLE!
Furlong, Marjorie & Virginia Pill, ERCD, Inc., P. O. Box 91648, Tacoma, Washington 98491

FIELD GUIDE TO EDIBLE & USEFUL PLANTS OF NORTH AMERICA
Myron C. Chase, Nature Study Aids, Inc., 411 Dakota Street, Red Wing, Minnesota 55066

FOOD IN THE WILDERNESS
George W. Martin & Bob Scott, Life Support Technology, Beaverton, Oregon 97005

GUIDE TO COMMON EDIBLE PLANTS OF BRITISH COLUMBIA
A.F. Szczawinski, G.A. Hardy, British Columbia, Provincial Museum, B.C., Canada

KNOW YOUR POISONOUS PLANTS
Wilma Roberts James, Naturegraph Publishers, Healdsburg, California 95448

WILD EDIBLE PLANTS OF THE WESTERN UNITED STATES
Donald R. Kirk, Naturegraph Publishers, Healdsburg, California 95448

BETTER HEALTH WITH CULINARY HERBS
Ben Charles Harris, Barre Publishers, Barre, Massachusetts

A MODERN HERBAL (two volumes)
Mrs. M. Grieve, Dover Publications, Inc., 180 Varick Street, New York, New York 10014

THE SECRET LIFE OF PLANTS
Peter Tompkins & Chris Bird, Avon Books, 959 Eighth Avenue, New York, New York 10019

EAT THE WEEDS
Ben Charles Harris, Barre, Publishers, Barre, Massachusetts

HERBS AND MEDICINAL FLOWERS
Matthias Hermann, Galahad Books, New York, New York

BACK TO EDEN
Jethro Kloss, Woodbridge Press Pub-

lishing Company, P. O. Box 2053, Beverly Hills, California 90213

FILMS

PREPARING AN ANIMAL FOR USE

USAF Training Film #FTA 279C
B&W, 13 min., 1957
Shows how to prepare animals in the field for survival use.

TRAPS AND SNARES

USAF Training Film #FTA 279P
B&W, 13 min., 1958
Important approaches to selecting appropriate location and type of trap or snare.

FISHING

USAF Training Film FTA #279Q
B&W, 12 min., 1958
Basic approaches to locating fish and effective techniques for catching fish with limited or improvised equipment.

SURVIVAL FACTORS: FOOD AND WATER - SURVIVAL SUPERMARKET

USAF Training Film #TF6210
Color, 25 min., 1971
How to prepare and preserve animals as food supply under survival conditions.

FOOD FOR FAMILY SURVIVAL

Filmstrip
Explains what would happen to a family if suddenly isolated tomorrow due to an emergency and discusses whether or not they would have food and water on hand for several days. Suggests situations such as floods, storms, blizzards, nuclear attack and earthquakes and tells what to do in an emergency and how to prepare for it.

U. S. Department of Agriculture Motion Pictures Services, Room 1850 South Building, Washington, D.C. 20250

FOOD FOR LIFE

22 min.
Two young Americans, Karen and Bob, make poor nutritional choices in the midst of a bountiful food supply. But Emilio, a South American, lacks variety from which to choose, and an Asian-Tara, who lives in a small farming village in India, is poorly nourished because she lacks both quantity and variety. The film compares the food practices and problems of these four teenagers from diverse backgrounds - Tara, who does not get enough to eat, Karen, who does not eat the right things, Emilio, who does not have the right things to eat, and Bob, who eats too much. All four suffer from mainutrition. Tara and Emilio need help. Karen and Bob can help themselves.

Perennial Education, Inc., 1825 Willow Road, Northfield, Illinois 60093

FOOD FOR A MODERN WORLD

This film traces the dramatic developments in United States food, technology and agriculture over the past 50 years. It compares our present ability to produce and preserve food with the situations that exist in other parts of the world. The film discusses current concerns about our present and future world food supply. Modern medicine has reached areas where agriculture has remained primitive. Death rates go down, and populations grow. There is already hunger in more than half the world today. The need to extend the worldwide application of modern agricultural techniques grows more apparent with each passing day.

Perennial Education, Inc., 1825 Willow Road, Northfield, Illinois 60093

EDIBLE PLANTS

Color, 10 min., 1967
Illustrates the abundance of common edible, palatable plants surrounding campers in the wilderness.

Sterling Educational Films, 241 East 34th Street, New York, New York 10016

EDIBLE PLANTS IN THE SUMMER

Color, 11 min., 1968
Illustrates the abundance of common edible, palatable plants available in the summer.

Sterling Educational Films, 241 East 34th Street, New York, New York 10016

EDIBLE PLANTS IN THE WINTER

Color, 11 min., 1968
Illustrates the abundance of common edible, palatable plants available in the winter.

Sterling Educational Films, 241 East 34th Street, New York, New York 10016

PART 8

- NAVIGATION

OBJECTIVES

At the completion of this section each student will:

- Be able to relate the importance of navigational skills to everyday living as well as emergency situations.
- Be familiar with the major types of maps and their general uses.
- Be able to recognize the common map symbols and interpret their meaning.
- Be able to list at least six ways of determining direction from improvised methods and tools.

ACTIVITIES

Have all students close their eyes and point to the North; check for accuracy.

Have each student draw a map of how to get from school to home. Exchange the maps and have the second student stand up and interpret the directions. Also try this with no written material, only verbal descriptions. Discuss the importance of giving good directions and being oriented at all times. How accurate must an individual be to direct rescuers back to an accident scene?

Brainstorm a number of situations where knowing directions would be critical in an emergency.

Draw a brief basic diagram of the streets in the city in which you live. The students can become familiar with their own city as well as becoming direction-conscious through brief quizzing periods (i. e., which direction does Howard Street run between Second and Third Avenues: If you turned left off Washington, travel one block and took a left, what street would you be on and what direction would you be traveling?).

Obtain a celestial chart from the National Geographic Society. After a briefing on the major constellations, schedule a field trip to a local football field during the evening. Using a flashlight, point out the constellations which are instrumental in direction-finding. The same can be accomplished by punching very small holes in exposed completely black 35mm slides. Merely outline the formations that are on the star charts and then project them onto a screen.

Find North using the sun and then set up a sun dial on the school grounds.

Basic map and compass courses set up in an area are good, practical applications for using these tools.

REFERENCES

THE HEAVENS
A celestial chart of the stars. National Geographic Society, printed August 1970 for National Geographic Magazine.

GUIDE TO BASIC MAP READING
GTA 526, 1973. A training aid for basic map reading and navigation. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

MAP, COMPASS & CAMPFIRE
Donald E. Ratliff, Binfords & Mort, Portland, Oregon

WILDERNESS NAVIGATION
Seattle Parks and Recreation, 100 Dexter Avenue North, Seattle, Washington 98104

MAP & COMPASS

Bjorn Kjellstrom, American Orienteering Service, Laporte, Indiana 46350

TOPOGRAPHICAL MAPS

Geological Survey, Map Information Office, U. S. Geological Survey, Washington, D.C. 20242

SURVIVAL-SEARCH & RESCUE
AF MANUAL 64-5

Department of the Air Force, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

SURVIVAL TRAINING ADDITION
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SURVIVAL--U.S. ARMY FIELD MANUAL
FM 21-76

Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

THE OUTDOORSMAN'S EMERGENCY MANUAL

Anthony J. Acerrano, Winchester Press, 205 East 42nd Street, New York, New York 10017

TEACHING BASIC SKILLS IN
SURVIVAL EDUCATION (Lesson Plans)

Skip Stoffel, Survival Education Association, 9035 Golden Given Road, Tacoma, Washington 98445

TRANSPARENCIES FOR TEACHING--SURVIVAL/
DISASTER EDUCATION PROGRAMS

200 or more transparencies which cover the entire spectrum of emergencies from wilderness emergencies to natural and man-made disasters, Survival Education Association, 9035 Golden Given Road, Tacoma, Washington 98445

FILMS

LATITUDE, LONGITUDE AND TIME ZONES

Color, 14 min.

Through models and animation, this film describes in detail how parallels of latitude and meridians of longitude can be used to determine the position of any place on earth. Then, considering the earth's rotation in relation to the sun and prime meridian, we see how the time zones around the earth were established.

Coronet Films, Coronet Building, 65 East Water Street, Chicago, Illinois 60601

MAPPING THE EARTH'S SURFACE

Color, 16 min.

The fascinating process of mapmaking is studied from the establishment of a network of control points, through the collection of detailed information by ground teams and stereoscopic aerial photography, to final compilation and printing. We also see how triangulation, distance measuring devices and computers are used. Collaborator-Arthur H. Robinson, Professor, Randall D. Sale, Associate Professor, Department of Geography and University Cartographic Laboratory, University of Wisconsin. With technical assistance by United States Geological Survey.

Coronet Films, Coronet Building, 65 East Water Street, Chicago, Illinois 60601

MAPS AND THEIR USES

Color, 11 min.

A variety of maps is presented in this film to introduce the study of special map symbols. How to read a map is shown by describing a scale of distances, a grid, and legend. The many uses of maps point out their importance in everyday life.

Coronet Films, Coronet Building, 65 East Water Street, Chicago, Illinois 60601

MAPS: AN INTRODUCTION

12 min.

An introduction to the representation of our environment by symbols. Using a classroom setting, the film shows how a model of the community is constructed, photographed and mapped by tracing the enlarged projected image. County, state and world maps are introduced, and on a vacation trip one of the class members is able to identify physi-

cal and cultural features symbolized on his road map.

Association Instructional Materials, Executive Offices, 866 Third Avenue, New York, New York 10022

MAPS FOR A CHANGING WORLD

B&W, 11 min.

Traces the evolution of world map concepts from ancient times to the Jet Age and emphasizes the influence of air transportation on our present-day ideas of map making.

Encyclopedia Britannica Education Corporation, 425 N. Michigan Avenue, Chicago, Illinois 60611

MAP SKILLS: RECOGNIZING PHYSICAL FEATURES

11 min.

Maps are compared with live scenes of the same areas to associate map symbols with the natural features they represent. Physical features such as gulf, peninsula, island, strait, channel, tributary, plain and plateau are defined, and basic principles of using colors to show elevation are illustrated with models.

Coronet Films, Coronet Building, 65 East Water Street, Chicago, Illinois 60601

MAP SKILLS: UNDERSTANDING LATITUDE

11 min.

Traces the development of latitude in global exploration and map-making as a response to man's need. Introduces tropic, temperate and frigid climate zones. Shows relationships between latitude and climate, and how to compare different places in the world-their climates, locations and distances from each other.

Coronet Films, Coronet Building, 65 East Water Street, Chicago, Illinois 60601

MAP SKILLS: UNDERSTANDING LONGITUDE

11 min.

Mapping the earth from earliest times to the present has involved the concept of longitude in exploration and travel. Shows how meridians are drawn, how longitude and time are related on the globe, and how to use longitude with latitude to pinpoint the exact locations of places.

Coronet Films, Coronet Building, 65 East Water Street, Chicago, Illinois 60601

MAP SKILLS: USING DIFFERENT MAPS TOGETHER

11 min.

Learning how to compare the information from different kinds of maps, Jim and Bill gain insights that they were unable to get from reading many pages of text. Through animation, maps of the same scale and projection are combined to reveal relationships between natural features of the earth, human use and social and political features.

Coronet Films, Coronet Building, 65 East Water Street, Chicago, Illinois 60601

MAP SKILLS: USING SCALE

11 min.

Compares scale models with actual objects to help define scale. Introduces the main types of map scales, shows how to use them to estimate distances, the difference in large-scale maps, and how understanding scale is essential in meaningful map reading.

Coronet Films, Coronet Building, 65 East Water Street, Chicago, Illinois 60601

THE COMPASS

11 min.

In the classroom, the teacher explains the meaning of "direction" and demonstrates the function of the compass. The film then illustrates the practical application of information learned in school, as one of the students puts his knowledge to good use in an emergency.

Contemporary, McGraw Hill Films, Sales Service Department, 300 West 42nd Street, New York, New York 10036

NAVIGATION: TOOL OF DISCOVERY

19 min.

The story of the men who left familiar shores to explore the unknown, and the fascinating devices and ingenious methods they used to find their way

across uncharted seas. This stimulating film begins with the Phoenician traders and brings the viewer up to the days of Captain James Cook. Told by a sea captain, the story combines live-action animation and graphic materials of early times. Useful for units of study on exploration and discovery, extension of geometric concepts and latitude and longitude.

Stanton Films, 7934 Santa Monica Boulevard, Los Angeles, California 90046

The above films represent only a fraction of those available at local and regional media service libraries.

PART 9

- SIGNALING

OBJECTIVES

At the completion of this section each student will:

- Understand what role signaling plays in emergency preparedness and more specifically, rescue.
- Be able to list the major methods of signaling distress to others.
- Be able to list at least six basic principles involved in proper signaling.

ACTIVITIES

Brainstorm some of the possible situations where signaling would be imperative for any type of rescue to be affected (i.e., stranded automobile, aircraft downed and lost in the wilderness).

Have each student bring a small hand mirror or something shiny that is similar. Have them practice hitting a target in a 360 degree circle using the hands as a sighting device.

Ask local representatives from pyrotechnique companies to demonstrate their products. The military is sometimes a good source for this activity. Local jobbers are more than happy to explain the use of flares, smoke canisters, etc.

Make up hypothetical emergency situations and ask the students to improvise some type of signal (i.e., you are involved in an accident in which the car has skidded on a rain-slick highway and gone over an embankment. How would you stop traffic in the downpour to obtain help for you and the injured passengers?).

REFERENCES

EMERGENCY PREPAREDNESS KITS AND INFORMATION FOR YOUR: HOME, AUTO, BOAT, AIRPLANE, AND WILDERNESS OUTING
(Educational brochures), Gene Fear, Gerry Sabel, Skip Stoffel, and Leslie Gritman, Washington State Department of Emergency Services, 4220 East Martin Way, Olympia, Washington 98504

OUTDOOR LIVING
Eugene H. Fear, Editor, Tacoma Unit, Mt. Rescue Council, P.O. Box 696, Tacoma, Washington 98401

SURVIVAL TRAINING ADDITION AF MANUAL 64-3
Department of the Air Force, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

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Daniel E. Fear, Editor, Survival Education Association, 9035 Golden Given Road, Tacoma, Washington 98445

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THE SURVIVAL BOOK
Paul H. Nesbitt, Alonzo W. Pond, William H. Allen, Funk and Wagnalls, New York, New York

THE OUTDOORSMAN'S EMERGENCY MANUAL
Anthony J. Acerrano, Winchester Press, 205 East 42nd Street, New York, New York 10017

FILMS

WINTER DISTRESS SIGNALS
Color, 13 min., 1968
The film discusses why many of the distress methods available to the lost camper in summertime are not applicable in wintertime. Dramatizes the ways in which winter distress signals are employed to summon assistance.
Sterling Educational Films, 241-34th Street, New York, New York 10016

SURVIVAL-IMPROVISED EMERGENCY SIGNALING
USAF Training Film #TF6186
Color, 12 min., 1968
Shows how a downed aircrewman attracts attention of search and rescue units. Cites use of fire, smoke and parachute. Explains how to lay out symbols in desert, arctic and jungle. Highlights use of shadows, embankments, ruts, paths in grassy areas, and materials staked to poles.
USAF Audio-Visual Libraries, recruiting and distribution centers.

WATER SURVIVAL COMMUNICATIONS-IMPROVISED SIGNALING METHODS
USAF Training Film #TF5595C
Color, 7 min., 1964
Demonstrates various ways of making signaling devices when survival kit equipment is not available. Shows how flares, mirrors, balloons, etc., can be improvised from miscellaneous items.
USAF Audio-Visual Libraries, recruiting and distribution centers.

SECTION VII

EMERGENCY PREPAREDNESS KITS AND HELPFUL INFORMATION

OBJECTIVES

At the completion of this section each student will:

- Be able to define emergency preparedness kits and their respective requirements for varying situations and terrain.
- Be able to list the four basic components of any kit regardless of the geographic location for which it is designed.
- Be aware of the need for home preparedness and what should be kept on hand to meet the needs of any emergency.
- Be able to list the basic components of emergency kits which should be found in cars, trucks, boats, snowmobiles, and airplanes.

ACTIVITIES

Have each student list the items he or she would put into five different types of kits. Discuss this and give a rationale for each of the items. If each student had to cut the number of items to six, what would they be and why?

Procure some small, empty containers such as bandaid cans and have each student make a basic outdoor kit for hiking. How many more items can be added? Have a contest and see who can put the most usable items into a bandaid size can.

Have each student go home and list what emergency equipment is stored in the family home, car, truck, recreation vehicles, etc. Based on family activities, what should be there? This exercise is aimed at bringing about an awareness of emergency preparedness to the parents. Have each student personally and privately evaluate his or her family's preparedness.

Discuss the possibility of power and utility outages in each individual home. In the event of outages over an extended period of time, what is the availability of water, a heating source for food, and lights? List the items that should be kept on hand.

REFERENCES

EMERGENCY PREPAREDNESS AND INFORMATION FOR YOUR: HOME, AUTO, BOAT, AIRPLANE, & WILDERNESS OUTING (Educational Brochures)
Gene Fear, Gerry Sabel, Skip Stoffel, and Leslie Gritman, Washington State Department of Emergency Services, 4220 E. Martin Way, Olympia, Washington 98504

SURVIVING THE UNEXPECTED WILDERNESS EMERGENCY
Gene Fear, Survival Education Association, 9035 Golden Given Road, Tacoma, Washington 98445

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Daniel E. Fear, Editor, Survival Education Association, 9035 Golden Given Road, Tacoma, Washington 98445

THE OUTDOORSMAN'S EMERGENCY MANUAL
Anthony J. Acerranto, Winchester Press, 205 East 42nd Street, New York, New York 10017

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FILMS

THE SURVIVAL KIT (Part 1)
Color, 10 min., 1967
Shows a survival kit contained in a box six inches long by four inches wide, and two inches deep. Describes the items in the kit and explains how they are designed to combat the enemies of survival. (Writer's note: The facts portrayed in these films are somewhat outdated as they deal with long-term survival, but the films are generally good.)
Sterling Educational Films, 241st 34th Street, New York, New York 10016

THE SURVIVAL KIT (Part 2)
Color, 10 min., 1967
Shows how two girls who, despite a serious accident in which they lost everything except their survival kit, make themselves comfortable in a short space of time and take positive action to effect their rescue.
Sterling Educational Films, 241st 34th Street, New York, New York 10016

THE PHILOSOPHY OF TEACHING EMERGENCY PREPAREDNESS

Regardless of what aspect is approached, the study of human survival is a fascinating subject. The immediate response of school age people is one of excitement and wonder; adventure and the unknown immediately come to mind. Teachers enjoy the subject of human survival because the student interest is high and the subject area so diverse. Even so, the rationale for teaching survival education in the schools has not been sufficient to allow more than token treatment in special interest or elective courses. In addition, many subjects outside the standard curriculum are continually pressing for acceptance. Educators are constantly beseiged with new material to include in their already crowded schedules. These facts coupled with funding problems constitute most of the opposition to incorporating survival as a standard curriculum offering. However, as a fully integrated multi-disciplinary program, it can be taught on a regular basis with no additional cost to the school district.

All of the major concepts embodied in Emergency Preparedness Education are presently being taught in the school systems. These concepts are simply not related to the idea of survival in emergency situations; a good example of this is found in basic science. Part of this discipline deals with the principle ways in which heat and cold are transferred. Very little, if any, time is spent discussing the ways the body loses or gains heat. This is true in spite of the fact that hypothermia is the number one contributor to death and injury during outdoor activities. Thousands die each year from heat disorders during so called heat waves in the large cities. Another example can be found in home economics where food and nutrition are regularly discussed. However, very little, if any, time is spent talking of food storage for times of emergency or the preparation of foods under adverse or emergency conditions. Modern literature has tremendous potential for learning situations by relating previous disaster and survival experiences of others. A literature class designed to analyze writings in this area would be of great interest to students. In essence, a full spectrum emergency preparedness education program can be incorporated within every discipline currently being taught in the schools. The only prerequisites for teachers are a commitment to teach survival education and a willingness to learn something about this fascinating subject.

The following outline relates many of the disciplines which are offered in secondary schools and colleges. Considering each area of study, some of the major points relating to survival education have been listed. Perhaps these ideas will trigger additional thoughts concerning important facts. At the very least, the information should impress upon educators the inter-disciplinary aspects of the program. At the end of this outline is a comprehensive list of occupations and safety oriented careers which require survival knowledge on a daily basis. It is hoped that some day most of the career training programs that turn out professionals in these areas will incorporate this valuable training as standard procedure.

MAJOR DISCIPLINE AREAS WITH SOME IMPORTANT FACTORS WHICH RELATE TO SURVIVAL EDUCATION

Anthropology

- . Primitive cultures
- . Primitive living techniques with respect to geographic location
- . Living with the environment
- . Man's adaptation to hostile environments
- . Basis for our culture and its basic beliefs today

Astronomy

- . Navigation through use of stars
- . Navigation through use of sun

Basic Science, Physics, Geology

- . Principles of conduction, convection, radiation, evaporation and how they relate to body thermal regulation
- . Principles involved in firecraft, kindling temperatures, and alternatives for making fire.
- . Clarification of water laden with glacial flow
- . Animal behavior for food procurement
- . Fulcrums, pulleys, and levers for improvising
- . Insulation and thermal conductivity of various materials (metal versus air, etc.)
- . Navigation - celestial and basic navigation
- . Meteorology - major threats of large storms and their destructive powers
  - Forecasting
  - Anticipating a weather threat
- . The use of rocks (flint) and minerals (clay) to make tools
- . Natural hazards of geological origin

- Earthquake
- Volcanoes
- Avalanches
- Glaciers
- Flash floods
- Mud and rock slides
- Tsunami or seiche wave generation from earthquakes

. The desert environment and relating problems

. River bed and flood plain formation, the dangers of erosion and flooding, good and bad locations to build homes

. Hydrological cycle

Biology, Physiology, Zoology

. Functions of the body

. Physiological makeup of the body

. Energy use and loss

. Body reactions and defenses to environmental factors

. Chemical balances of the body

. Body process for thermal regulation

. How the body uses food and water - what happens when it does not get them

. Micro-organisms that live in plants and water - which are harmful and which are not

. Bacteria - how they form on food not properly stored and how they can be killed with proper preparation

. Edible animals, their habitats and habits

Botany

. Taxonomy of poisonous and edible plants

. Useful plants and their geographic location

. Value of plants as a food source

. Medicinal value of plants

. Man's dependence upon plants

. Transpiration and how the principle applies in a solar still

. Use of parts of plants for making tools, clothing and shelter

Chemistry

. How solutions are different from suspensions - purification, filtration and clarification of some solutions

. How charcoal can remove gasses dissolved in water

. Ignition temperatures of common natural and man-made materials for fire starting

. Explanation of common caustic, corrosive, toxic or explosive materials - liquid, solid or gas; where they can be found and how to neutralize or protect oneself against them

Drivers Education

. What to do if stuck in snow, mud, sand, etc.

. Driving safety in different weather

. Survival items to carry in the car

Ecology

. How humans can survive by living like the animals

. How forest fires start and how they can be prevented

. Pollution problems and how to cope with or prevent them

. How ecosystems work - availability of water where plants are located - availability of animals where water is located

Education (Primarily teacher oriented)

. Curriculum development

. Teaching techniques

. Learning and performance objectives

Geography

. Cartography

. Geographic climates and terrain

. Topography (map reading)

. Environmental factors which influence everyday living in societies throughout the world

Home Economics

. Food and nutrition

. Preserving foods

. Food spoilage

. Nutritional needs

. Cooking under all types of conditions

. Primitive sewing, utensil making, etc.

. Permeable, water repellent, waterproof materials-advantages of breathable material

Journalism or English

. Communication skills

. Reading directions

. Survival literature

. Have famous survival books on hand to read - Jack London and Allistair MacLean are two famous authors who use survival situations extensively

. Visual media - television shows and movies depicting survival situations

Law Enforcement

. Search and rescue function

. Preventive search and rescue as it applies to political subdivisions

Mathematics

. Distance calculations

. Caloric consumption

. Clothing factors for cold environments

. Problem solving in general

Philosophy

. Logic and its use in everyday life

. Problem solving

Physical Education

. First Aid

. Self first aid and mountaineering first aid

. Medical kits

Physical Education (Continued)

. Effects of physical fitness on trip outcome and survival situations

. Health and personal hygiene

. Swimming skills

Political Science

. Role and responsibility of government in emergency

. Political makeup and subdivisions of government

. Time Lag Theory - government response to emergencies

. How political boundaries impede response in disasters

. How large disasters act to change disaster legislation

. Examine disaster laws and pick out items likely to be influenced by political considerations as opposed to those designed to help people

. Examples of use of taxes for disaster relief

. Implications of the National Flood Insurance Program

. Postulate a major disaster and show how government agencies work together, or fail to work together, for the common good. Try to determine why

. Review of democratic governmental processes and where the individual's responsibility lies

. Have students write letters to congressmen and senators if they see problems with disaster programs. Suggest solutions

Psychology

. Group processes and leadership

. Motivation

. Effects of stress and anxiety

. Mind dynamics

- Power of the human will
- Origin of the Positive Mental Attitude

. Psychological factors detrimental to an individual's analytical ability

. Perception, imagination and reality - how they differ

. Psychological drives in our stressful society which precipitate emergency situations

. Self-image (confidence-building self-talk, etc.)

. Psychology of the prepared versus the unprepared individual

Recreation and Leisure

. Safety aspects of various recreational pursuits

. Profound effect that recreational activities have on our personal safety

. Basic outdoor living skills

. How to pack a backpack correctly - center of gavity, pendulum action, etc.

. Public relations

. Youth leadership and direction

. Confidence building through challenging outdoor programs

Safety Education

. Safety as it applies to the following:

- Government
- Business
- On-the-job
- Off-the-job
- All recreational pursuits

. A vital part of survival is preventive safety

Sociology

. Group behavior - mobs and riots

. Is panic contagious?

. Advantages of working together in survival situations

. Discovering leaders, followers, idea men, etc.

- Which type of person would you want, or not want, to depend upon in a survival situation?

Speech

. Public speaking

. Persuasion powers

. Developing leadership qualities

Technology and Industrial Education

. Principles of construction

. Forging

. Metalurgy

. Tool craft (knowledge and theory of tool development a rock is a substitute for a fist

. Joints and how they are used in construction

. Woods and their uses

. Knowledge of simple weight-bearing structures

. Repair of transportation devices

Agricultural Sciences

. Raising crops

. Animal husbandry

OCCUPATIONS AND SAFETY—ORIENTED CAREERS WHICH NEED SURVIVAL KNOWLEDGE ON A DAILY BASIS

1. Teachers - K-12 and College. Total emergency preparedness education program to teach self-reliance and confidence during any type of emergency.
2. Outdoor Recreation Safety Specialist – BSA - Professional, Youth Leadership, Camp Directors, College Instructors.
3. Recreation Safety Officer - U.S. Forest Service, National Park Service, State Park Programs.
4. Social Workers - Therapeutic and rehabilitative benefits of survival programs such as those run by B.Y.U.
5. Hunter Safety Specialist - National Rifle Association, wildlife and game departments.
6. National Parks - Preventive search and rescue safety briefings at interpretive centers, recreation safety officers.
7. Safety Education Specialist (in general) - Washington State Patrol, S.P.I., Department of Game, Department of Fisheries, Department of Highways, Labor and Industry, parks departments.
8. Local, State, Federal - Emergency Services Coordinators
9. Disaster Analysis Teams - Government-local, state, federal.
10. Search and Rescue Coordinators - State and county level.
11. Military Civil Service Survival Specialist - Base level, command level.
12. American Red Cross
13. National Safety Council
14. Parks and Recreation Departments - Support and safety to outdoor programs.
15. Youth Leadership and Confidence Schools - NOLS, Outward Bound, etc.

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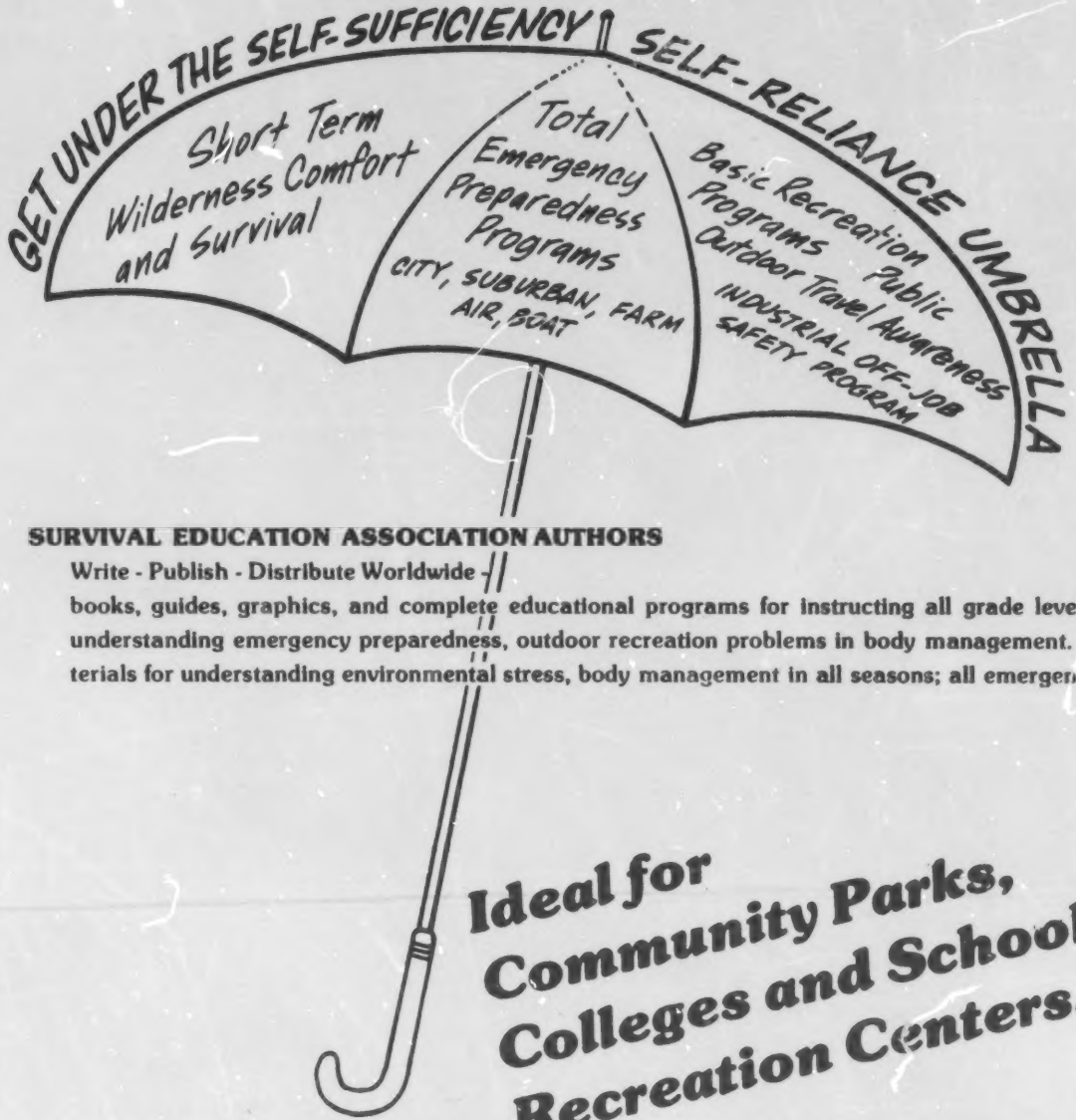
PROGRAMS FOR PUBLIC INVOLVEMENT IN BETTER LIVING OR BEING SELF-RELIANT


GET UNDER THE SELF-SUFFICIENCY SELF-RELIANCE UMBRELLA
Short Term Wilderness Comfort and Survival
Total Emergency Preparedness Programs
CITY, SUBURBAN, FARM AIR, BOAT
Basic Recreation Programs Public Outdoor Travel Awareness
INDUSTRIAL OFF-JOB SAFETY PROGRAM

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books, guides, graphics, and complete educational programs for instructing all grade levels in understanding emergency preparedness, outdoor recreation problems in body management. Materials for understanding environmental stress, body management in all seasons; all emergencies.

Ideal for Community Parks, Colleges and Schools, Recreation Centers.

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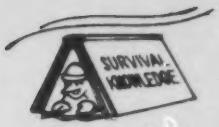
Your comfort outdoors is our concern.



The ultimate body protector

7-DAY 56-HOUR COURSE CURRICULUM

FOR TEACHERS IN

EMERGENCY PREPAREDNESS EDUCATION

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SUBJECTS AND BRIEF CONTENT

I. INTRODUCTION

A. To Course

B. To Survival

1. What Is It

2. What Does it Mean to Each Individual

3. A General Orientation to the New Philosophy of Survival Education and Its Place in Our Society Today

We are mentally conditioned to artificial environments. Our bodies are not acclimatized to environmental stress, i.e. time/distance vs. energy. We need an understanding of: -What could be the problem?- -What could possibly hurt me?- -How do I protect & conserve my body resources?- -How far can I go?- -What do I have to work with?- -Who can help?- -How do I get help?- -Where am I?- Awareness is the first step in problem solving ability. Pre-programing the mind, using knowledge to see yourself in the future.

II. ORIENTATION TO THE DEPT. OF EMERGENCY SERVICES AND

A. Roles and Responsibilities

B. History of Civil Preparedness Education

C. Survival/Disaster Education Movement within the State of Washington

D. Disaster Preparedness History within the State

E. Search and Rescue (History, current Status, Major Problems, and Relationship to Civil Preparedness

III. PHYSIOLOGY

A. Necessities of Life

1. What does the human really need to stay alive

2. Establishing priorities and necessities based on the physiological needs of the body

3. Priorities of life in a survival situation

a. Includes class problem with group interation

b. Application to full spectrum of emergencies

c. Dispelling myths commonly associated with survival situations

d. Average length of survival situations

B. Bodies' Enemies

1. In order of importance

2. How they effect the emergency situation

a. What are the things that an individual might have to cope with

b. Physiological as well as psychological stressors

c. Effects of cold:

1. Physiological Response to Decrease in Temperature

2. Tips

3. Film: By Natures' Rules and Critique

4. Cold Injuries

a. Frostbite

b. Dehydration

c. Sun Blindness

5. Living in Cold Environments (Inner City, Desert)

D. Effects of Heat

1. Physiological Responses to Increase in Temperature

2. Problems, Tips

3. Injuries and Complications

a. Stroke

b. Heat Exhaustion

c. Dehydration

d. Hyperthermia

4. Living In a Hot Environment (Inner City, Desert)

E. Other Concerns

1. Injury/disease

2. Water imbalance (hypohydration)

a. coolant

3. Hypoxia

4. Hyperventilation

5. Chemical Imbalances

6. Energy use and loss

a. fatigue

b. fuels

7. Pain

8. Fear, panic, anxiety

9. Acclimatization needs - heat, cold, altitude

Proper body management is the key through: Knowledge about the basic necessities for keeping the body alive anywhere; Basic body functions, and body reactions to physiological stress of hostile environments without the benefit of modern services and technology: Basic information on how to protect and provide the necessities of life long enough to get out of your predicament. A knowledge of inner body physiology allows the brain to recognize impending inner body problems before they incapacitate his use of knowledge and dexterity. Physiological requirements also dictate survival needs and priorities. Preconceived ideas could lead a victim to incorrect actions and priorities in the first hours and minutes of an emergency. (This time period is critical and has great bearing on the ultimate outcome of the situation.) The body effectively operates within a twelve degree inner core temperature range. Fluctuations beyond this range mean mental and physical helplessness. Simple understanding of physiological functions and reactions, allow a person to recognize problem indicators and impending dangers within the body.

IV. ENERGY/COOLANT

A. Where energy comes from

1. Delicate temperature balances

B. Energy use problems and waste products

C. Conservation of energy/coolant

D. So far-so-fast-

E. Conditioning and acclimatization

F. Regional differences

G. Safe & pure food and water

H. Storage from predators

An understanding of where energy/coolant comes from - where it goes - what takes it away and how to conserve it, is mandatory knowledge if a person is to be able to stay alive with what he has within his body at the time of the emergency.

V. MENTAL ASPECTS OF SURVIVAL (PSYCHOLOGY)

A. Man against himself

1. You, as body enemy #1

2. Your brain is your best survival tool

3. How body physiological changes affect mental capabilities

4. How mental stresses & anxieties affect the body

B. Mental factors which affect survival

1. Mental stresses & the effect of isolation

2. Perception, imagination, and reality

C. Importance of immediate and trained responce

1. Built-in factors and mass reaction

2. Statistical Analysis of mass and group reactions, during disasters and emergencies

3. Teachers' responsibilities

4. Group processes and leadership

a. group survival

D. Fear and Control

1. Accepting fear as a natural reaction to the unknown

2. Methods of quelling fear in oneself and others

a. Rules of mind control

3. Psycho - Cybernetics - the psychology of human survival

a. Motivation

b. Mind dynamics

1. Power of human will

2. Proper mental attitude

3. Self images - confidence building

4. Self talk

5. Comfort zone

6. Adapting to change

4. Goal Setting - A plan of action with objectives

E. Psychology of the prepared vs. the unprepared

Your brain is your best survival tool. Anything that affects the brain will affect your survival.

Knowledge, judgment, attitude, skills, and confidence are easily overruled by anxiety, fear, panic or emotional stress in the enexpected emergency.

Every student must have an understanding of how the mind functions under stress, and how to control the undesireable reactions. Survival is nearly 100% mental, because the mind controls all action or motion. The brain controls the inner body while the body fuels and guards the brain. Without mental control, your mind cannot solve the problems of survival.

This storehouse of life's learning and experiencies can become useless under the stress of anxiety and panic.

Man must be able to recognize the mental problem indicators, and understand that any emergency will create some mental stress that must be overcome with proper attitudes.

Hence, anything that upsets your mental attitudes will affect your ability to survive. - Mental stress.

VI. ESTABLISHING BODY NORMALITY AS PROBLEM INDICATORS IN A STRESSFUL ENVIRONMENT

A. What is normal

B. How do we use this as an indicator of something going wrong

C. What is our body saying to us

D. Biological functions of indicators

E. Body management

VII. SHELTERS

A. Global principles

1. Body protection - physical and environmental problems

2. Principles for heat, cold, wetness, convection

3. Design, characteristics, materials

4. Energy/coolant prerequisities

5. Environmental site hazards

6. Regional considerations - terrain and weather

7. Seasonal considerations

8. Locations with or without fire

B. Techniques - full spectrum of emergency environments

1. Emergency action shelters

a. Physical protection

b. Weather protection

2. Proper insulation and practical application

a. Thermal conductivity of various materials as prospective insulation (i.e. air, snow, ice, wood, soil, metal)

C. Clothing (design and relative value of various materials)

1. Clothing designed with physiology in mind

a. Types and values

b. Design and Characteristics

c. Color values

d. Insulation qualities

1. What is a good insulator (experiment with metal cans)

e. Types of materials

1. Wicking action: cotten vs. wool vs. synthetics

2. Porous materials as opposed to non-porous

f. Geographic considerations

g. Layer system for temperature control

2. Protecting what you have

Since the human body does not have fur or feathers some type of body shelter is mandatory for maintaining the delicate temperature balances necessary for life's process.

Without shelter, humans can only survive within a narrow temperature range. Shelter, the second survival priority, consistsof anything that protects the body from temperature extremes, weather or other life threatening forces. Without shelter, extreme conditions could cut survival time to as little as 3 to 4 hours. (This includes heat as well as cold).

Humans maintain their constant inner core temperature through regulating the insulation and ventilation of clothing which protects the micro environment surrounding the body from the natural environments of heat & cold. When clothing becomes inadequate because of environmental factors, improvised shelter is necessary to protect the inner body from excessive heat loss or heat gain.

It is therefore essential that people have the ability to construct the proper shelters dictated by environmental hazards and using what is available.

Shelter is invaluable for: -Psychological reasons- -Security reasons- -Conservation of energy-

VIII. FIRECRAFT

A. Why firecraft - the basis for warmth

B. What are the things that fire gives us

C. How to build a fire

1. 3 basic principles of ignition

2. The fire triangle

3. Common errors

4. Types of tinder, kindling, fuel

   a. Regional considerations

   b. Alternative materials to use for fuels

   c. Natural and man-made materials you can use

5. Types of fires

   a. Advantages of each

   b. Fire maximation, getting the most and utilizing the least by using the proper fire and considering reflection/convection

6. Fire site selection

7. Extinguishing fires

D. Preparing and carrying firestarting materials

E. Improvised ways of starting a fire in different emergency environments

F. Practical use of non-conventional fire-producing devices

G. When to build a fire and under what conditions would it become a liability

H. Overview of the full spectrum of emergency environments and firecraft requirements and firecraft requirements

Fire is a supplement to shelter in that it provides the body with warmth and protection from the elements. Firecraft provides a multipurpose skill which has application in a variety of areas related to survival. It provides great mental reassurance and morale, supplements rations by providing heat which would have to be provided by calories, and is also helpful in signaling, water purification and preparation of food.

It is essential that people have the ability to build proper fires under various environmental conditions from available fuels and ignitions.

If clothing is sufficient, fire may not be needed. When clothing is poor, a shelter is necessary. When both clothing and shelter are poor a fire will be needed.

IX. SIGNALLING

A. Audio and Visual - letting others know of your distress

B. Principles and Techniques - Types of signals

1. Ground to air

2. Wilderness

3. Auto

4. Brainstorming ways to make yourself visible under different situations

5. Day/Night - Contrast

C. Preparedness

D. Common Mistakes

Signalling is the ability to make others understand your distress and location. It is the common sense knowledge of what to use, when to use it and how to communicate with others without the spoken word.

X. SELF FIRST AID AND FAMILY CARE

A. First aid under survival/emergency conditions

B. Self first aid in survival - you alone

C. Priorities of action: breathing, bleeding, broken bones, shock

D. The essentials and guidelines to follow

E. Other concerns:

1. Self diagnosis of aches and pains

2. Body response to altitude

3. Heat, cold, fatigue

4. Injury/disease

5. Hypo-hydration

6. Chemical imbalances

7. Body acclimatization

8. Physical conditioning

9. Body defenses and responses

10. Patching the body (temporarily)

11. Improvising

12. Natural medications

13. Priorities of life

14. Phychological implications

15. Treatment of environmental injuries

a. Cold

b. Heat

c. Chemical imbalance

F. Kits and their use, etc. - Contents (what should a kit contain)

Analysis and treatment of the body's minor aches and pains, which are the telltale signs of problems developing. Body problem indicators are the only way people can evaluate the thermal and physical state of the body. Aches and pains cause misery, and misery breeds more misery. Misery then causes loss of good judgment. People, when far away from medical assistance will have to be their own doctor, lawyer, carpenter, and mechanic during a time lag period until back to civilization. This will also be true during disasters until help arrives.

Since injury affects all aspects of survival, it should be considered heavily in preplanning. Knowledge of self-first aid is essential in the event of an accident or a crash away from competent medical aid. Personal abilities will have to suffice for a doctor.

XI. EMERGENCY PREPAREDNESS KITS- SURVIVAL KITS

A. Prospective Uses--Environmental Considerations

B. Provisions for improvising

C. Basic Content--What all kits should contain

D. Short-term versus long-term

E. Types of kits

1. Wilderness

2. Automobile

3. Boat

4. Home

5. Airplane

F. Regional differences

1. What tools are needed

Survival kits are nothing more than a collection of resources which better help an individual provide themselves with the necessities of life. Each kit is manufactured to solve specific problems in a given geographic area. A thorough understanding of suggested components will better insure that the right equipment is available when any emergency arises.

Only preparedness (mentally and materially) helps to preprogram man's thought process when the unexpected happens.

XII. IMPROVISING

A. Problem solving - logic (common sense)

B. Recognizing problems and solving them

1. There are solutions, the problem is finding them
2. Defining problem-material, physical, mental
3. Types of emergencies
4. Recognizing potential threats - mental, environment, physical
5. Aches, pains, miseries
6. Environmental , weather, terrain
7. Geographic differences
8. Recognizing physical or mental problem in ourselves or others
9. Defing normality - what is normal average for human body
10. Preplanning
11. Time lag period
12. Body enemies
13. Priorities of life and survival
14. Improvising - analysis of environment
15. Stay put or walk?

C. Utilizing what's available

1. Learning to recognize available resources
   a. Natural environment
   b. What you have on you and in your pockets
   c. Garbage/rubbish
   d. Stalled transportation

D. Rules for brainstroming and improvising

1. Individually and collectively, using the group's thoughts

E. Reference to:

1. Clothing
2. Shelters/insulation
3. Firecraft
4. Navigation
5. Signaling
6. Food/water procurement-traps/snares
7. Self-first aid
8. Fulcrums, pulleys & levers
9. Primitive living skills
10. Tool craft

F. 78 ways the body is like an automoble

G. 150 uses for one item

This knowledge encompases all basic principles of how to make what you need from what you have.

Improves ones observation and stimulates the mind to look at all ramifications for solving problems.

Remember man's survival entails using the principles of physics.

Improvising your immediate needs from whatever you have at hand is a problem only you can solve.

It is a mental, physical, material problem that uses basic principles to solve and acquire a material need from what ever is available.

With the absence of familiar materials modern man must retrogress and acquire the habits, attitude and values of the cavemen to provide his immediate priority needs. The cavemen invented it. The pioneer lived it.

Modern man has to learn it by applying basic learned principles and experimentation with materials.

If you don't have it and need it - you will have to find some way to solve the problem yourself or perish.

Practice, experimentation, imagination, enhance one's self confidence in using basic principles to provide something that is needed to survive a little longer. This subject is vital to you because it is using your mind to analyze a problem and implement a need.

XIII. WATER - PREPARATION AND PROCUREMENT

A. Procurement of water under all types of emergency conditions.

1. In the home

2. The mountains

3. The desert

4. Along the ocean

5. Water - solar and vegetatation still demonstration

B. Purification and clarification

C. Effects of traveling vs. remaining stationary

Survival reports place water, thirst and dehydration among the most important survival problems. Water is essential to the body's chemical balance, with intake and output of liquids necessary for life processes and normal function of vital organs. The body needs two quarts of water everyday for system balance and efficiency. Lower intake causes gradual dehydration and diminished capability and proficiency.

XIV. TRADITIONAL SURVIVAL SKILLS - LONG - TERM SURVIVAL

A. Their application and use (what they give the modern survivor)

1. Problems of long-term improvising

B. Primitive tools

C. Traps and snares

1. Animals - preparation and procurement of food

D. Edible plants

1. Taxonomy of poisonous and edible plants

2. Useful plants

3. Plants as food source

4. Medicinal value of plants

E. Nutritional needs

1. Cooking under any conditions

2. Preserving foods

3. Food spoilage

4. Energy expended opposed to relative food values

5. Physiological responces of the body during lack of food

Mental well being is vitally important in survival. Although many of the long term skills in survival may never be used, it is important to realize what they give an individual in the way of self confidence and self image. Their value must never be underestimated, even though the possibilities of being involved in a long term situation are remote.

This knowledge helps to fine tune the ability to observe valuable resources.

XV. NAVIGATION AND DIRECTION

A. Importance of being able to determine direction

B. Discussion in relation to survival situation: stay put or travel

C. Improvised directional and navigation aids and tips

1. Utilizing God given senses

a. Common sense navigation

2. Mental Maps

a. Identifying your surroundings

3. Techniques using:

a. Vegetation

b. Stars

c. Moon

d. Sun

e. Animals

f. Prevailing wind

g. Terrain

h. Improvised time methods

4. Observation Training

a. environmental and regional considerations

D. Importance of maps and direction in our every day lives

This subject is used every day by every person everywhere. It is using environmental knowledge to know where you are in relationship to where you want or need to go.

Natural navigation skills provide the confidence and ability for outdoorsmen to return to civilization without the use of artificial tools or assistance. Such skills are absolutely necessary for travel to better survival conditions or whenever the loss of map and compass occur.

XVI. LEADERSHIP

A. Responsibility on the teacher's part

B. Analysis of group reactions and effect of good leadership

C. Special Considerations

1. Children

2. Women

3. Elderly

4. Handicapped

D. Individual recognition and delegation of responsibility

1. Leadership qualities

2. Responsibilities as a leader

Leaders must assume the tremendous responsibility, complete safety and security of those under his charge from the beginning of the outing or until the end.

XVII. GOVERNMENT AND VOLUNTEER RESPONSE IN TIME OF EMERGENCY

A. Local - State - Federal

B 1. Who's responsibility - agencies involved

2. Time lag - how soon rescue

B. General search and rescue picture

1. Volunteer search and rescue organization

C. Damage Assessment

This subject should be emphasized every day because it is the big part of any survival emergency.

How long before help comes? An understanding that this time is the victim's time - where he will live or die by his own decision and actions.

XVIII. ETHICS

A. Sanitation

B. Use of natural resources

C. Conservation principles with regard to teaching in the outdoors

D. Checklists for instructors in classroom and during field exercises

1. Course size

2. Legal considerations

3. Insurance

4. Records

5. Ethics

XIX. DISASTERS

A. Natural Disaster

1. Major problems and safety procedures

2. Areas primarily located in this state which could be affected

3. Priorities and checklists

4. Risk analysis and government's role

5. Expected time for relief

6. To include: avalanches, glaciers, flash floods, mud and rock slides, lightning, forest fires, tornadoes, high winds.
Explain why even though some of these are not prevalent in the immediate area, they are important to study from the standpoint of our mobil society (it is suggested that 25% of our population is mobil at any one time).

7. Weather and environment considerations

a. Anticipating a weather treat

b. Basic meterology

c. Forecasting

d. Hydrological cycle

B. Man-made disaster

1. Major problems and safety procedures (Potential disasters)

a. Nuclear--Peace-time, War-time

b. Spectrum of other disasters

2. Expected time until relief

C. School disaster planning

1. The need

2. A format

3. Brainstorming specific school emergencies

4. Brainstorming approaches to school officials and administration on need for planning

D. Review of global survival

1. Over-view of global geographic regions

a. Aritic

b. Desert

c. Sea/seashore

d. Mountain

e. Temperature

2. Conditions that exist across the country

3. Conditions in this state

Awareness that all the skills, techniques learned apply anywhere you take your body. Everyday, everywhere.

In our fast highly mobile society one can travel into or through different environments that may have to be coped with.

Since weather is man's greatest enemy, it is important to give him the knowledge to recognize a storm and other events which could hurt him.

Weather creates most of the threats to life during outdoor emergencies and disasters. That is why you need knowledge of the emergency preparedness skills necessary to preserve life.

Heat gain or heat loss from any source combined with immobility because of a storm, or disaster affect the mind, body, spirit far away from civilization or when civilization leaves us (disasters).

Most moderns have become acclimatized and conditioned to the greenhouse environment of modern technology. Our experience with serious weather is generally gained from books, TV, and seeing it from a warm room. Weather in one form or another creates most of todays outdoor emergencies, and an understanding of the changeable forces is essential to solve immediate priority problems. The outdoors or the mountains never hurt

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anyone - It is man's presence among them that creates natures' threat to man.

Rockfall, avalanches, deep snow, wind, rain, falling trees, flash floods, forest fire, have all been a part of the outdoors for eons. Artic, desert, arid, wet and mountainous regions present unusual travel and preparedness problems.

People traveling away from civilization into these regions must familiarize themselves with the seasonal hazards and the climatic conditions.

People must have knowledge about a possible danger before they can recognize a possible threat.

XX. TEACHING AIDS AND TECHNIQUES

A. Classroom experiments

B. Student projects

C. Field activities

D. Demonstrations

E. Displays

F. Audio visuals

G. Films

H. Resources

I. Organizations

J. Intergrating of principles into all academic disciplines

K. Curriculum development

L. Practice teaching sessions

To give instructors, an overview of what is available to the teacher to support his/her resources. Also, to make them aware of possible education areas they are not covering. Also, a great asset in improving established activities.

XXI. CURRENT PICTURE NATIONWIDE IN SURVIVAL EDUCATION

A. Organizations and factions involved

B. Ultimate goals of preparedness

XXII. FIELD EXERCISES

Survival Education Association offers instructional packages of teaching modules for better living through awareness education.

☆ ☆ ☆

DEFENSIVE LIVING:

Graphics and teaching guides for implementing a course of awareness of coping with modern, everyday emergencies.

100 graphics on philosophy, the art of looking ahead to the cause and effect of what you are about to do, with the ultimate goal of being prepared.

85 graphics on the human body's response to environmental complications of heat or cold, and self-mismanagement of resources and activities.

120 graphics on individual responses to an emergency with self-aid and attracting assitance to your problem.

* Designed for Jr./Sr./College or general public.

EMERGENCY PREPAREDNESS EDUCATION:

A program of graphics, texts and lesson plans for an awareness of natural disasters and man made emergencies that can pose a threat to human comfort and enjoyment. This program covers the mental factors and physiological factors of coping with emergencies surrounding the loss of modern services and all outdoor emergencies. A tested program that was designed by many of the best survivalists in America.

Designed for Jr./Sr./College or general public.

BIOLOGICAL SURVIVAL:

A complete program of graphics, texts, lesson plans, and workshops for teaching the information needed for human survival anywhere. A proven course on the human factors involved in coping with the mental, physical and environmental complications in the outdoors.

* Designed for K-12/College/General Public.

RECREATION MODULE:

A complete program of text, lesson plan and graphics for teaching the basics of any outdoor travel away from civilization. A tested program with an introduction to body management, equipment and maintenance for optimum comfort and enjoyment in any outdoor activity. Covers the controllable and uncontrollable factors, equipment, eating and sleeping, planning, and emergency response necessary for individuals while away from modern instant response.

* Designed for Jr./Sr./College/Clubs/General Public.

AVIATION EMERGENCY RESPONSE:

This short course covers all of the procedures for sustaining life during light aircraft emergencies and landings off airports. A proven course on the human factors involved with environmental and physiological responses to the emergency.

* Designed for clubs, general public.

SEARCH AND RESCUE MANAGEMENT:

Offered in concert with the National Association for Search and Rescue. A complete course in managing the search function for those officials entrusted with the task of responding to humans in distress. This course was designed by the foremost SAR responders in America. Contains graphics, instructor guides, and student workbooks.

FOR MORE INFORMATION AND PRICES WRITE THE ADDRESS ON THE OTHER SIDE

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RECREATION SAFETY and SPECIAL OUTDOOR PARTICIPATION BROCHURES

Mini-texts for hiking and hunter safety courses. Excellent for clubs or groups participating in any outdoor activity or wilderness travel, any season. .02 each

"Wilderness Travel (Summer)" On the Trail
Hiking course mini-text or customer relations and outdoor safety promotion handout. Information on planning, equipment, hazards.

"Wilderness Travel (Winter)" Off the Trail
Hunter safety course mini-text or hunter safety and winter travel a customer relations and winter sports promotional handout. Contains information about the insidious effect, prevention of, and treatment of hypothermia *("the killer of the unprepared")*.

"Fatigue and Exhaustion" 3-fold
Energy use and energy loss, dehydration, hypothermia, state of mind in stress situations. *(Best all-purpose brochure)*

"Survival The Challenge to Stay Alive" 2-fold
Natural weather problems, recommended kit contents, and how to use them. Fire building and general information for staying alive in the desert, Arctic, or wilderness. *(A must for improvised survival kits)*

"Orienteering Street Signs of the Wilderness" 2-fold
Mini-text and worksheet for teaching wilderness map and compass.

"23¢ Storm Kit 'do-it-yourself Survival Kit!'" 2 fold
How to improvise a compact emergency kit from items found in the home and grocery store. Designed for Scout/school/educational project.

"High Country Safety (Mountaineering)" 3-fold
Recommended planning, preparedness and conduct in traveling the high back country. Suitable for mini-text for mountaineering courses. Identifies personal, environmental and terrain dangers.

"Automobile Aircraft Survival Kit" 2-fold
Recommended equipment to be carried in your second home. Emergency repairs and procedures for travel in threatening situations. Suggestions for staying alive in remote accident situations.

"Small Boat Survival Kit" 2-fold
Recommended equipment to be carried on small boats. Emergency procedures in boat accident and river dumping.

"Special Heat and Cold Problem Treatment Card" 4 1/4 x 5- 1/2" $.01 each. Illustrated cartoon situation showing treatment of hypothermia and hyperexia.

Teaching Aids

Survival Situation Card Game
A game ghat gives each participant a different hypothetical survival situation to solve, with 10 questions to answer pertinent to staying alive anywhere / 16 Student Problems 64 color coded cards / $3.00 per set

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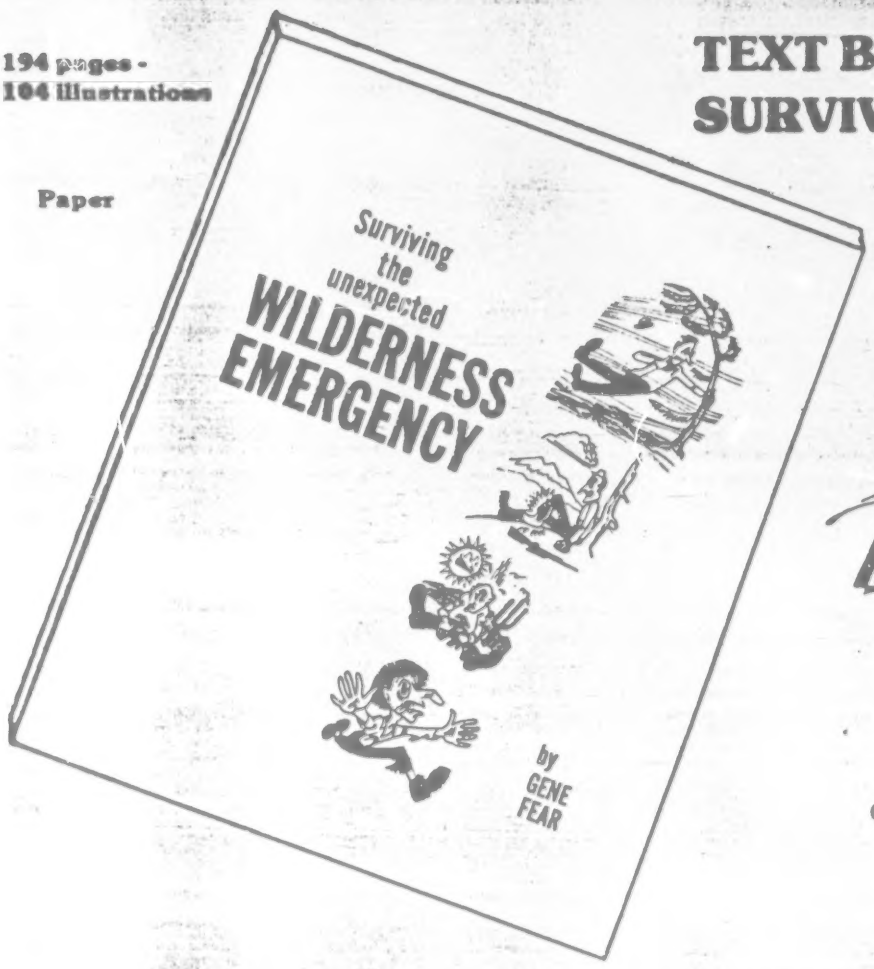
TEXT BOOK FOR SURVIVAL EDUCATION

194 pages -
104 illustrations

Paper



SURVIVAL SCIENCES IS A NEW, INTERESTING, AND RELEVANT SUBJECT THAT IS CAPTURING NATIONWIDE STUDENT INTEREST

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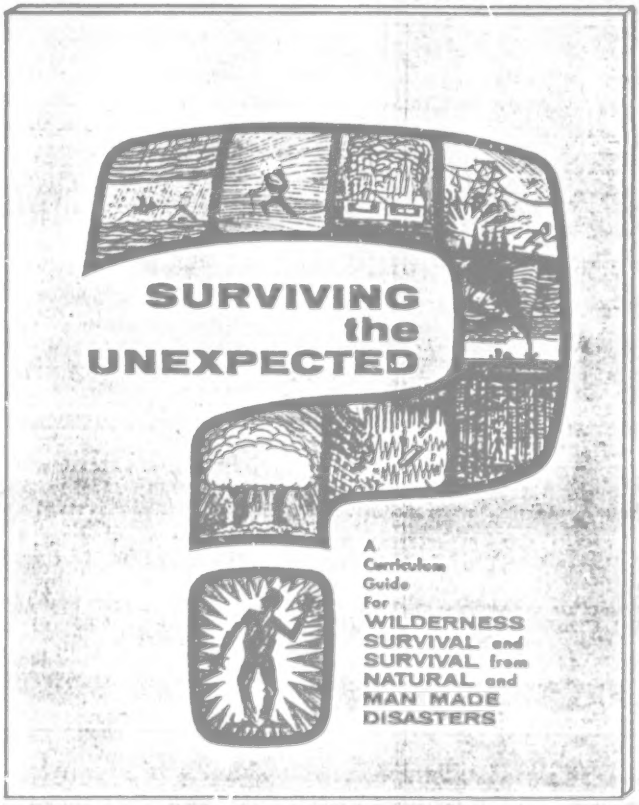

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